

# AMERICAN *Cinematographer*

LEONARD CLAIRMONT

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY



**JANUARY 1948**





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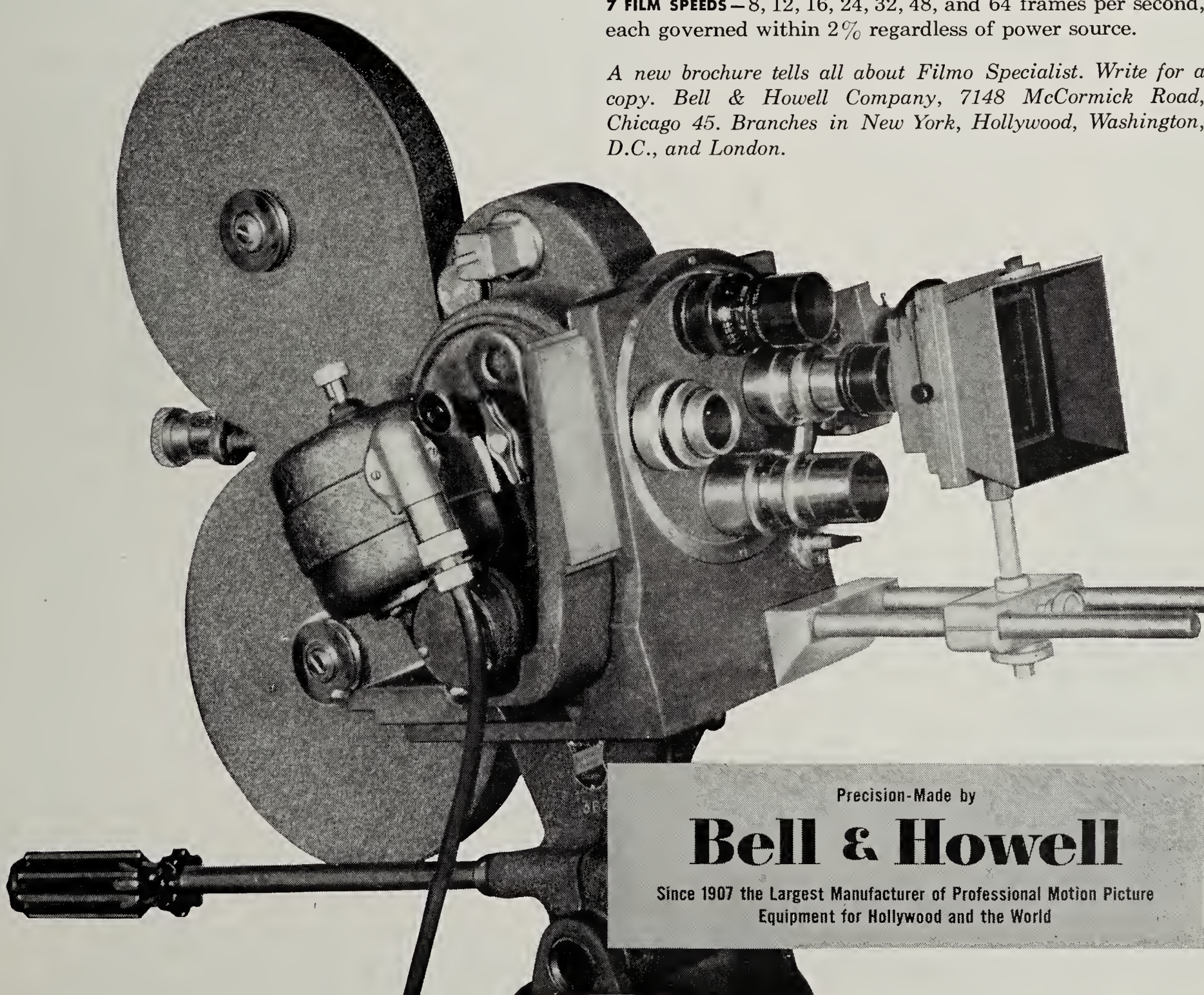
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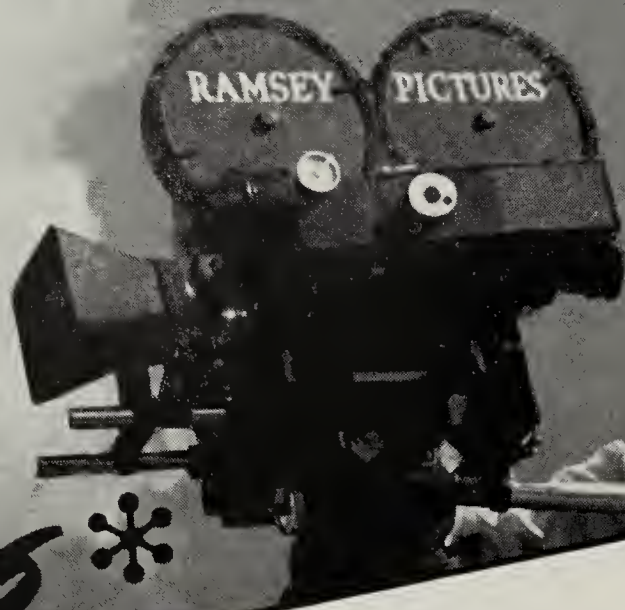
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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 29

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ON THE FRONT COVER—Director of Photography Robert Burks, A. S. C., (behind camera) ready to make an unusual scene of Dennis Morgan in elevator for the Warner Production of "To the Victor;" with director Delmar Daves riding the shot in bucket seat of crane. Crane and elevator together dropped 30 feet from top to floor of stage to film the shot.

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# Filter Screen Recommended For Interior – Exterior Shots

by VICTOR MILNER, A.S.C.



**F**OR the past number of years the problem of the cinematographer to control or balance natural interiors with brilliant exteriors has been a condition taxing us to the utmost. With the advent of the factual type of story filmed today away from the studios, and with companies scattered all over the country, the above problem has become a real headache.

To obtain perfect detail in a normally lighted interior, shooting out to an over-brilliant exterior, has led a great many of us in the past to try various methods to control it. It was not very difficult to place colored glass in small window openings, or to cut gelatins that could be readily pinned on. The cutting of small

pieces of celluloid dyed with whatever color the cinematographer desired to hold the exterior light down, did not offer any great problem. The unfortunate part was that when the openings in windows or in doorways were of large dimensions the above method could not be used and forced many of us to resort to the use of gauze or bobonets. Again, the problem was far from being solved. The gauze placed outside of doorways interfered with entrances and exits of actors, plus the fact that we were forced to use an enormous amount of artificial light in the interior to balance with the exterior, as the gauze in itself was not sufficient to control the exposure.

The difficulties on location of obtain-

ing enough generator output, and the necessary heavy lighting equipment to balance the interior with the exterior, is not only a costly problem, but the time element involved is something none of us can ignore nowadays.

I have for many years tried to solve this problem and found a possible solution by adapting the method used by many shopkeepers to protect valuable merchandise displayed in their windows, a resort to the use of large sheets of celluloid of different colors which can be rolled up or down in a few moments. It, therefore, occurred to me that the same method can be used on the set by dyeing the large sheets of celluloid or plastic material with the same colors that our filter factors are dyed today. We, therefore, will be able to roll down a neutral density dyed sheet or a 23A-56 or even a graduate with which to control an over-backlighted sky. And if you find this method impractical, the making up of frames on which you can stretch the large sheets of the dyed celluloid, I am sure, would work out very effectively.

The use of a graduate with a 50 or 75 neutral density screen can be readily accomplished by rolling the graduate down to the place desired over any other screen.

The screen of celluloid or plastic material must be of sufficient thickness to prevent buckling. Larger screens can be made up by cementing them together, making as narrow a patch as possible.

A further use of the screens can be made by using a frame on which the large sheet of celluloid dyed to the filter factor you wish to use and placed behind the actor or actors in a medium shot or close-up, would make it possible for you to eliminate the use of a filter in the camera and to cut down the amount of light used on the principals in front of the celluloid screen, enabling the performers to open their eyes and give a much more natural performance as against the use of a terrific amount of light in order to balance the exterior by the use of a filter in the camera. This method will also eliminate over-correction on the subject before the camera.

Up to the present, our raw stock manufacturers have had no call for this type of material. I am certain, however, that an industry request for such equipment will be recognized immediately. At least I, for one, do hope that early availability of large filter sheets described above will allow for better results in cinematography.



"FOREVER AMBER," Kathleen Winsor's lusty novel of Restoration England, has at last been brought to the screen in a burst of Technicolor glory by the Twentieth Century-Fox Studios.

As this reviewer predicted several months ago (after having spent a good deal of time on the set of "Amber" during shooting), there seems to be a fair amount of critical controversy regarding the film's value as dramatic art—but only unanimous praise for the magnificent Technicolor photography of Leon Shamroy, A.S.C.

Admitting that the acting in the film rarely manages to climb above the level of that in the average high school Senior Play, it cannot be denied by even the most waspish critic that "Amber" is a visual spectacle of a magnificence seldom before seen on the screen. Indeed, if ever a dramatically anemic story were saved by superb production technique—this is it. The photography is so polished, the costumes and sets so handsomely designed, and the historical period so faithfully reproduced, that even the anti-climatic flounderings of the emasculated plot frequently emerge as glamorous entertainment.

Let it be said in all fairness to the producers of the film, that they have struck the fairest possible medium between the requirements of mass box-office taste, the censorship taboos of the Johnston Office, and faithfulness to a third-rate novel whose main appeal as best-selling literature was its detailed account of the somewhat amateurish boudoir antics of a 17th Century slut.

Typical of the miracles wrought in the adaptation is the fact that the heroine (an admittedly unprincipled baggage) manages to produce an illegitimate child as the result of a conception that is apparently immaculate. In fact, according to the carefully sterilized screenplay, nothing even faintly carnal happens to her up to that point except that she is kissed in a shamelessly brotherly fashion by her celluloid lover who seems quite bored with the whole prospect. But no matter how they slice it, "Forever Amber" is basically a *cameraman's* picture—and as such it is one of the finest production jobs ever to reach the screen.

### Jewel-toned Technicolor

As a visual presentation, "Amber" is distinguished (and the word is used *literally*) by color photography that probably comes as close to perfection as any blending of art and mechanics can come. Leon Shamroy, A.S.C., has infused the production with jewel-like color that seems to sparkle and glow at the same time. His camera treatment, combined with art direction and costume design of superlative quality, results in a screen pageant

# "FOREVER AMBER"

## TAPESTRY IN TECHNICOLOR



by HERB A. LIGHTMAN

that is like nothing so much as a Gobelin tapestry brought to life. He has succeeded in capturing the authentic mood of a lusty historical period—at the same time lending it that touch of stylized mellowness with which time glosses over the harshness of an age long since past.

Such a result is, of course, no accident—but rather the final product of intelligent teamwork by all department heads actively engaged in molding the production. In planning the pictorial approach to the film, Shamroy worked very closely with Director Otto Preminger, Art Director Lyle Wheeler and Costume Designer René Hubert. No set was constructed and no costume executed until it had received his technical approval. As Director of Cinematography he was directly responsible for the photographic result appearing on the screen—and it was his job to evaluate each scene from the threefold viewpoint of *art, drama, and mechanics*.

Explaining his theory of creative cinematography, Shamroy says: "In photographing any production—whether it be color or black-and-white—the professional technique is purely individualistic because it results from the Director of Photography's own particular style. But since the cinema is a basically *visual* medium, each production must be photographed in such a way that it will not become monotonous. In filming a color picture, the cinematographer must use variety in designing the lighting and in the use of color itself. There cannot be a sameness of lighting throughout. Sequences calling for moonlight, daylight, or candlelight (as were required for 'Amber') demand a change in mood in lighting—and such changes should serve as stimulants to the audience viewing the film."

Shamroy's approach to a particular sequence is determined mainly by the dramatic idea which is to be conveyed by the

action within that sequence. The dominant mood, the lighting key, and the subdued or forceful use of color all evolve from this basic concept; so that the sequence as it finally appears on the screen is not merely an attractive *mélange* of light and color, but an integrated unit accurately keyed to the emotional meaning of the story situation. When the pictorial approach is thus so precisely motivated, there is no danger of the photography lapsing into a pattern of stock formula. Each sequence is original in its execution while yet remaining consistent with the overall approach of the film.

### Restrained Color Emphasis

Since the Twentieth Century-Fox production of "Forever Amber" was conceived as a realistic drama of human emotions, and not as one of the candy-coated film musicals which the same studio is so adept at turning out—the principle photographic problem was to tone down the force of the color, a particularly difficult task in view of the fact that the film deals with one of the most garishly colorful periods in history.

Shamroy points out that the Technicolor camera, by its very nature, tends to accentuate an audience's awareness of color in a scene: "Very few people realize how much color actually exists in everyday life," he observes, "There is a general unawareness of colors until you get behind a camera to photograph a scene and are immediately struck with the amount of brilliance which is present. The reason for this is that when color is encased in a frame, it registers forcefully and becomes exaggerated by its 'imprisonment.' The action in "Forever Amber" took place during the Restoration Era, a lush and colorful period in which people wore especially brilliant costumes. Therefore, the main photographic problem in translating the story to the screen was to *de-emphasize* the color so that it would





"Forever Amber," photographed in magnificent Technicolor by Leon Shamroy, A.S.C., is an example of photography accurately keyed to situations of widely varying character. The mood of a rural English countryside (left) is precisely reproduced through a combination of simplicity of camera angle, mist-filtered lighting and pastel color design. The elegance of Whitehall Palace (right) is made to sparkle regally through the use of crisp high-key lighting and wide-angle compositions calculated to convey the impression of spacious halls.

not detract from the characters or from the dramatic action."

With this in mind, *natural* colors (i. e. grey, green, brown, and black) were used as predominant areas for settings and costumes. The brighter hues were applied sparingly in the more dramatic sequences. Shamroy maintains that no radically new or different photographic techniques were used in getting "Amber" onto film. Shooting was basically no different from his previous assignments: "State Fair," "The Black Swan," "Crash Dive," "Wilson," and "Leave Her to Heaven." He does, however, point out that the film employs *refinements* of previously conceived color photography techniques. He feels that the various avenues of color cinematography have not yet been fully or properly explored, because color tests are so expensive that the studios are reluctant to do

much research along these lines. Consequently, cinematographers on color features must learn from their own experiences and from those of their fellow cameramen as they go along.

Because of the wider apertures necessary to record sufficient light for Technicolor photography and the resultant loss in *depth of field*, a 25 mm. wide-angle lens was used almost exclusively in shooting "Amber." Only in the relatively few close-up scenes were lenses of longer focal-length employed.

#### Ever-Changing Spectacle

The great variety of situations and locales portrayed in "Forever Amber" created a combined challenge and field-day for the cinematographer. The film opens with an exterior night sequence in which the infant Amber is left on the doorstep of a peasant hut by an unidentified party

fleeing from the wrath of the Round-heads. Having thus made her somewhat vague debut, she is next shown as a full-blown young charmer with a positive itch to become the mascot of a band of cavaliers on their way to join the court of the restored Charles II in London.

These rural scenes are photographically excellent. The night shots actually look like *night*, and the interiors are done in a mellow low-key that faithfully simulates the candlelight illumination of the period. Later, when Amber is flung into prison, the lighting skillfully accentuates the murky, smoke-filled atmosphere of her grim cell.

In the film's earlier sequences, during which Amber is portrayed as an amateur tramp trying to win her merit-badge in skullduggery, the shabby locales and set-

(Continued on Page 30)



Scenes from the two most striking (and photographically complex) sequences in "Forever Amber" are reproduced above. (Left) The blazing horror of the Great London Fire is projected in a subjective manner by means of lighting and camera angles which place the audience in the thick of the blazing inferno. (Right) The duel sequence, a fine combination of chemical fog and mood lighting, is notable for its almost complete lack of color. The overall grey tone of the sequence is exactly in key with the atmosphere of impending doom which permeates the situation.



# COLOR IS DIFFERENT



by ROBERT SURTEES, A.S.C.



Production number for "The Unfinished Dance," with Margaret O'Brien and Cyd Charisse. Note how costumes and players are prominent in contrast to the subdued background.

**D**IRECTORS of Photography are confronted with many unusual problems when making their first color picture, after many years of photographing black-and-white productions exclusively. This article is written from my personal experiences in changing over to the Technicolor process, and in order to help other Directors of Photography who sometime must make a similar step.

Mr. Joseph Pasternak, producer, and Henry Koster, director, assigned me to their MGM production, "The Unfinished Dance," a story of the ballet theatre, because I had never before photographed a color picture. It was a new and novel approach all right, but before many days on production, I wished for just a bit more experienced background. Without careful study of the work done by other cameramen in the field of color photography previously I would not have been able to tackle the assignment. At least, "The Unfinished Dance" used a different approach.

Foremost was the idea of using color as a story point. To clarify this—the use of any specific color, such as red, should have a dramatic or story-telling effect on the plot of the screenplay. Therefore, into the script of "The Unfinished Dance" was injected the following:

The color, red, was on a coat worn by one girl, the heavy, who throughout the story uses it to bribe another girl who desires a red coat more than anything else in the world. Another example of using color for dramatic effect—it was planned to have the ballet dancers in white costumes in their dressing room which has neutral gray walls—suddenly the door of the room bursts open and a girl in a bright yellow dress runs in excitedly. The *yellow* now becomes the focus of all attention and the other girls in white crowd around her. Naturally the audience's eyes goes directly to the girl in yellow, where the dramatic interest lies.

With such an approach the picture promised to be an interesting one from the cameraman's viewpoint. Following this preliminary planning ensued the usual conferences with the art department, wardrobe, costumes, make-up and the Technicolor consultants.

The art department under Mr. Cedric Gibbons and his associate, Danny Cathcart, was all out for the plans. In fact, their intense interest and hard work made the entire production work out better than was ever expected. Famous paintings of ballets and of ballet costumes were studied carefully. All the sets were planned to be complimentary to the colors used in the wardrobe on the people working in the scenes. Many people cry for the use of pastels in Technicolor pictures, claiming they look softer, more pleasing and better to the eye. We found this not to be true—a British film, "Henry V,"



was run over several times by Mr. Koster and all concerned. This film was said to be very smooth and the costumes were claimed to be dyed in soft pastel colors. Not once in our many screenings did we actually see a single pastel color, but we found that the pastel feeling was suggested by the careful choice of complimentary colors in the wardrobe and set walls. In other words, if a blue was used on the wardrobe of the main actor the clothes of the people around him were of a tone somewhat lower in scale, such as gray, then the walls were of a neutral coloring. This we tried to maintain throughout "The Unfinished Dance." We also attempted to keep all the settings from being overdressed with furniture. In this manner the design of the architectural features of the sets would appear simpler and in better taste with the clothes on our people.

From the study I put in on viewing many famous paintings of the ballet, mostly the French Impressionistic School of painting, I drew the conclusion that the ballet numbers in the film should have as little contrast as possible. It seemed that the beauty of the ballet could be best captured in Technicolor with a system of soft overall lighting of practically no contrast whatsoever. All of the numbers in the picture are photographed in this manner. Therefore the beauty of the dances are truly shown and a color effect was secured by the separation of the costumes' colors from the backdrops which had been carefully designed by Mr. Cathcart to be subdued beneath the tones of the wardrobe. In one instance, the "Bartered Bride" number, the stage backings were actually painted with heavy brush strokes as is found in "Matisse" paintings.

In another number, "The Swan Lake," the stage floor was composed of 1200 square feet of one-inch mirrors. To the eye this was one of our most beautiful

settings but when we started to light it, it was our biggest headache in the picture. Each arc light that was used to light the dancers would reflect from the mirror floor and cast shadowy silhouettes on the backings. The dancers could not be cross-lighted from the wings as the limited stage space would not permit it. After much effort and also much luck we finally hit upon the idea of hanging large flats over the arcs lighting the stage and keeping the direct light off the dancers, but at the same time allowing the light to be reflected from the mirror floor to light the dancers. This eliminated most of the shadows on the backdrops and, using care, it solved our problem.

Another tough Technicolor situation arose in another sequence when we had to photograph an actor carrying nothing but a flash light—no other lights on the set! If you think this was easy to make believable you are greatly mistaken. We did get a very nice effect by building a special size flashlight with a photoflood bulb in it and ran a wire up the actor's sleeve and down through his trouser leg to our dimmer panel. In viewing this sequence on the screen one wouldn't realize that at times we had six or seven follow spots working on cue to show the projected light from the flashlight shining on the walls as the actor walked about the set. Also in this sequence we used open arcs without filters, Y-1's, as back light and glow lights behind the people. Contrast in this case was allowed to be very high. All in all it turned out successfully.

So much for the picture, "The Unfinished Dance," and now for several things we found from experience in shooting our first color picture.

Don't believe anyone you tells you that you can shoot color just like black and white—it won't take more than a few shots to convince you that that statement is a bit wild. The process has a technical

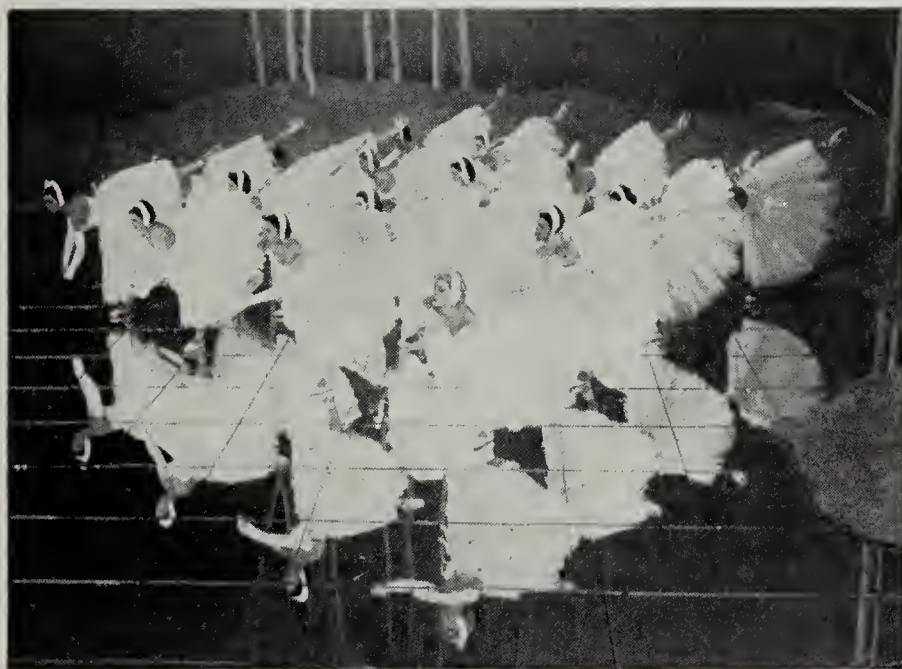
term called, "Color Temperature," and you'll learn about it by the day you see your first rushes. Of course you get one break, it takes three days to get your rushes back from the plant, so you are certain of three days' pay before you get thrown off a picture. And you can certainly guarantee yourself a long vacation if you try to shoot color as though it were black and white.

I do not advocate flat lighting or a lot of fill light either, but it certainly requires a different balance than black and white. The primary bugaboo is the inclination of getting red faces when the key of lighting gets too low—this is a common fault of over-the-shoulder angles in close ups. The person whose back is to the camera will definitely go red if he is kept in too low an amount of light as we do in black and white over-the-shoulder. Bring him up almost to the normal key of light, and sometimes I even learned to place a light blue gelatin filter 25, on this key light. When the faces go red you have dropped out of the low end of the scale or color temperature of the process.

At all times be careful of the Duo Arcs which are used for a fill light like broads are in black-and-white. Never use more than two silks on a Duo Arc—this light will really make a face go red on all occasions if over silked—if necessary to drop down the amount of light from the unit, pull it back away from the object you are photographing until the proper density is secured. Do not hang a lot of silks as it will change the color of the emitted light from the unit.

Backlight in Technicolor can be very cold or look bluish on the hair. It is a good policy to place light amber filters on all back lights such as 53 or 54 or double Y-1's. This will warm up the back light and look much better than the usual

(Continued on Page 31)



Color effect via photography for the Metro-Goldwyn-Mayer production, "The Unfinished Dance" was achieved by separation of costume colors from the backdrops, especially for the ballet numbers. Difficult lighting problems for the above scenes were successfully overcome to provide startling effects.



# THEATRE TELEVISION

by LOREN L. RYDER

Sound Department Head, Paramount Studio, Hollywood  
and President of Society of Motion Picture Engineers

*(This informative and up-to-the-minute paper on the present status of large screen television for motion picture theatres was presented by Mr. Ryder at meeting of the Academy of Television Arts & Sciences, Hollywood, on November 11th, 1947.)*

I HAVE had the good fortune of seeing all of the large-screen television equipment which has been demonstrated during the last several years and I have been able to sit in on many discussions of its use. I will endeavor to convey this information to you.

I have just returned from the 62nd semi-annual convention of the Society of Motion Picture Engineers where many papers were presented and where those present had an opportunity of witnessing a demonstration of direct projection large-screen television; the same performers photographed from a television tube, processed and projected on 16 mm. by the Eastman Process; selected 16 mm. films of television images prepared by Dr. T. T. Goldsmith of the Dumont Laboratories; slide films and a complete story on large-screen television in England; and a complete review of U. S. television by Dr. A. N. Goldsmith.

This is not going to be a technical discussion but rather a story of what is taking place, what are the trends, what are the possibilities and limitations, where do we, the individuals, fit into this picture.

I will start by distinguishing between television broadcasting and theatre television. Television broadcasting is that activity which is now under way in New York, Philadelphia, Washington, D. C., Schenectady, Chicago and Los Angeles, whereby picture images are being telecast at random to anyone having a television receiver and antenna so located as to obtain a satisfactory signal. Theatre television is the phase of this art which involves the large-screen projection of television images for viewing by an audience. This may or may not be in a motion picture theatre.

A few words about television broadcasting to the home.

Most people have little idea or appreciation of the rapid strides being made in television broadcasting in the East, both technically and from the standpoint of entertainment presentation. In keeping with West Coast activity, sports are most popular but national events and well presented story and variety programs are gaining a regular following—commercials and all.

The programs may originate anywhere



LOREN L. RYDER

from Schenectady to Washington, D. C., and can be telecast simultaneously at Washington, D. C., Philadelphia, New York and Schenectady. A link to Boston is to be tested this week. The East has many more receivers than the West. Bars, eating houses and hotels are featuring television receivers for their guests, even on a much more elaborate scale than in the West. All of this work is in black-and-white. The Columbia Broadcasting System, as you know, has discontinued the experimental telecasting of color television by the mechanical scanning procedure which they were advocating.

The recent rapid advance in television activity may be partly attributed to the image orthicon camera tube which, as most of you know, has a sensitivity many times greater than that of the iconoscope and 50 to 100 times greater than the fast-film. This has made it possible for the

television people to pick up afternoon and night sports events under any condition of lighting that is satisfactory for normal spectator observation. It is to be noted that with the films now available, the same programs cannot be picked up for newsreel presentation in theatres.

A large percentage of the programs are picked up by remote or relay pick-up equipment and transmitted by microwave links to the location of the main transmitter where the link signal is received, amplified and re-transmitted over the main television transmitter. The remote pick-up programs include sports events, current events of public interest and commercials at stores and factories. The studio programs include live action shows and entertainment from motion picture film.

It should be pointed out that, for the most part, feature type entertainment films are not and have not been popular



over television. It is the opinion of some, with which I concur, that feature entertainment films such as are now being produced for the motion picture theatre will not provide the best form of television broadcast entertainment to the home. Short subjects, travelogues and news events from film have been quite popular. The use of film as an adjunct to television will be discussed later in greater detail.

Many of us who have been fortunate enough to pioneer in both radio broadcasting and sound motion pictures feel that the format for television entertainment has not yet been found but when it is found, or evolved, it will be quite different from the legitimate stage, the motion picture or radio broadcasting. It will have an identity of its own. There is another thing which should be apparent by now and that is that television broadcasting is not going to grow and sweep the country over night. It has taken time for this type of entertainment to get under way in the East and we now find that the Midwest and West are going through the same growing period.

### Theatre Television

The recent technical advancement in theatre television even astounds the experts. In January of this year the RCA Company made a rather unsatisfactory demonstration of an all-electronic color television system on a screen 24 inches wide. On April 30th and May 1st the same company made a very satisfactory demonstration of color television on a screen 10 feet wide and 7½ feet high. This is a three-color simultaneous additive process which gave good resolution, good color value and good steadiness of image. Pick-up for this demonstration was from Kodachrome slides and Kodachrome 16 transmission with no radio link. This demonstration was made as a progress mm. motion picture film. It was direct report with no claim by the engineers that the equipment as presented was ready for theatre use.

It is interesting to note that this large screen color television demonstration was more satisfactory in picture resolution and detail than any black and white process that I have witnessed to date. The explanation may rest in the same phenomena that exists with respect to blowing up 16 mm. Kodachrome motion pictures to 35 mm. color or black-and-white, which as we all know has been found to be more satisfactory than blowing up 16 mm. black-and-white to 35 mm. black-and-white. A part of this improvement is no doubt due to color contrast as well as density contrast or to the fact that there are three channels, each supplying 525 lines of picture detail, which superimposed give a more effective picture.

At the time of that demonstration I said; and I say here, that in my opinion the quality of the picture demonstrated was sufficiently satisfactory for theatre

presentation. I stated then, and I state now, that there are many bridges to be crossed before color television can be a reality. In fact we need to learn how to commercially control and use one channel black and white transmission for large-screen projection before we try to use the three channels required for color. Our motion picture experience tells me, and I feel that it should tell you, that we should anticipate a long cycle of black and white picture work prior to anticipating color.

I will now discuss the demonstrations which took place during the 62nd semi-annual convention of the Society of Motion Pictures in New York October 20 to 24, inclusive.

At the Hotel Pennsylvania the RCA Company installed a standard dipole with erector type aerial, special television receiver and projection equipment with which they demonstrated instantaneous direct-projection large-screen television on a screen 7½ feet high by 10 feet wide. The program material used for this demonstration was a part of the regular evening program from the NBC transmitter on the Empire State Building which was fed from a studio in the RCA Building. The program was a live-action skit in a set simulating a broadcast studio and was of the informal variety type. There were about 700 present at this demonstration and all persons present could see and follow the action quite as well as though same had been projected from 16 mm. film. Some interference and picture break-up was encountered during the demonstration but in fairness to RCA or any company making an installation of that type, it should be pointed out that if same were a permanent installation, steps could and would be taken to either eliminate or avoid troublesome interferences. A steady picture is perfectly feasible in most locations. In my opinion the picture as demonstrated would be quite satisfactory for audience enjoyment of sports events and current news items.

The instantaneous direct-projection demonstration was immediately followed by a film projection of the same performers. The film was made on an Eastman Kodak Television Recording Camera photographing a special RCA kinescope. A paper describing this camera and process was presented during the convention and will be published in the Journal of the Society. The film also included shots made by television of the World Series and similar events. The film had several advantages—the tube being photographed was designed for optimum resolution as compared to a tube giving high-light output and the film when projected had greater contrast and higher illumination of the screen.

From the comparative demonstration it was apparent that both systems are perfectly feasible and I should say that both systems will find their respective place

in the future. I should also guess that the factor of selection will not be technical quality but rather which systems can best meet the showmanship and commercial requirements.

Contrary to common belief, there is a real advantage to having a slight delay in the presentation of television pictures. It allows time for the announcer to anticipate rather than follow the action. If you compare present day newsreel techniques with television techniques, you will be conscious of the fact that in the newsreel the commentator describes what you are going to see, thus heightening the interest; whereas, the television commentator describes that which has already been seen and is obvious.

The Kodak film demonstration was followed by a paper and demonstration film prepared and presented by Dr. T. T. Goldsmith of the Allen B. Dumont Laboratories. As previously mentioned Dr. Goldsmith has loaned this film to us for projection following my paper. The film includes photographed images accompanied by a narration describing the method and objective of making such pictures. This is followed by a picture of President Truman which was made at the Passaic Laboratories of Dumont from a telecast which had been picked up in Washington, D. C., transmitted by coaxial cable to New York, thence broadcast and picked up at the Dumont Laboratories. The dialogue accompanying this picture was recorded on wire and later re-recorded to film. The Truman film is followed by a typical commercial television broadcast.

The fluorescent material in the image tube had a very fast decay timing. The camera photographs two complete scans of the picture, extinguishes for one-half frame during film pull-down movement, thence exposes during the last half of a scan, the complete next interlacing scan, and the first half of the following scan before extinguishing and repeating the cycle again. By this method the camera makes a 24-frame exposure of a thirty-frame instantaneous picture and still has time for film pull-down between frames.

Captain A. G. D. West, Past President of the British Cinematographic Society and Director of Cine-Television, Ltd., presented a paper on the subject of large-screen television in England. Prior to the war the British installed experimental television equipment in several theatres. They are now installing equipment in five or six theatres for direct instantaneous projection of the marriage ceremony of Princess Elizabeth and Lieutenant Philip Mountbatten. In regard to large-screen television, the British feel that the technical advancement is far ahead of the theatrical understanding of its use. They are, therefore, not waiting for technical perfection but are installing the equipment in their theatres so that they will learn its



possibilities and its limitations. I congratulate them!

There were many other papers presented at the convention which would be of interest here but as you will be able to read them in the *Journal of the Society*, I feel I should proceed with my subject.

In this discussion I have included these Eastman and Dumont film methods under the general heading of theatre television, I suppose largely because they were so included at the convention and because they were seen on a large screen. I must point out, however, that these recording cameras were developed primarily as a tool for television broadcasting. This service was in need of a transcription method of network syndication, program storage and documentation. These films will, of course, be used in checking the quality of performances and in selling shows to advertisers. The fact that the equipment and

techniques developed may have application to theatre television was incidental to their design.

It is interesting to note that while any of us can criticize this 16 mm. work as compared to 35 mm. entertainment films, these people are fast approaching the accomplishment of their goal. In other words, they are rapidly approaching the accomplishment of 16 mm. quality.

I do not speak derogatorily of 16 mm. film for I concur with the group who, in conjunction with television broadcasting to the home, have worked for and gained standardization at 525 lines on a black-and-white picture. A very satisfactory picture can and will be put in the home with these standards.

I concur with the group who feel that these same standards are satisfactory as a feeler during the novelty period of theatre television for sports, news, etc.

I am emphatic in my feeling that the 525-line picture will not be satisfactory for long in the theatre. For a given degree of satisfaction it is my feeling that higher resolution will be required for the larger picture. I am concerned by the fact that only a little development work has been done and practically none, if any, is in progress to improve the picture quality beyond the 525-line standard. Band widths for both radio links and coaxial cable are also being established on a 525-line basis. If I am right this may restrict and retard theatre television activity. This lack of activity in the interest of theatre television is because the potential user—the theatre—has shown little or no interest in this particular problem.

Theatre television can be transmitted to the theatre by coaxial cable, radio links, and possibly by infra-red beam. I do not feel that there will be any problem of gaining privacy, if privacy is necessary. The problem is one of determining the best method before the pressure of time forces the industry into the first available method regardless of cost or advantage.

During 1945 and 1946 the Society of Motion Picture Engineers appeared before the Federal Communications Commission and in collaboration with the television broadcasting industry obtained parity of right to relay frequencies allocated for television use. On petition of other interests the F.C.C. issued public notice No. 97615 on October 22, 1946, calling for a hearing and re-allocation of these frequencies to the exclusion of television. After a discussion with Mr. Eric Johnston, Mr. Byron Price, Mr. Donald Nelson, Mr. Y. Frank Freeman and others, the SMPE submitted a brief and again appeared before the F.C.C. at its hearing on February 4th of this year. At this hearing the Society received telegraphic support from Mr. Johnston and Mr. Nelson, also letters and support from Loew's, 20th Century-Fox, Warner Bros., R.K.O., Paramount and others.

It is our hope and belief that favorable action will be handed down. It is also the opinion of those close to this work that the rights to these frequencies will again be challenged unless these frequencies are placed in service.

We of the Society feel that the time has come for the motion picture industry to determine the extent of its interest in theatre television and if interested, to establish a program to that end. With this thought in mind representatives of the Society, including the writer, have called upon the Motion Picture Association and asked that they coordinate the early thinking in this regard. Thus far no action has been taken by the Association but certain of the member companies, Warners, 20th Century-Fox, and R.K.O. have become ac-

(Continued on Page 29)



On the set of Paramount's "The Long Gray Line." With cameras and lights set for a closeup of Alan Ladd, the star chats with Director of Photography John Seitz, A.S.C., for a brief interval before the camera rolls.



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# The Cinema Workshop

(For Semi-Professional and Amateur Production)

## 19. Presenting Your Film

By CHARLES LORING

A completed motion picture—whether it be a documentary, a photo-play or a commercial subject—represents a great deal of time, effort and expense on the part of those who have had a hand in its production. But no matter what the subject, the approach or the budget, the aim of all films is the same: to gain a favorable reaction from the audience.

Those who make motion pictures professionally know that it is not enough to take pains in the production of a film; the same care must be exercised in its *presentation* if the audience reaction is to be all that was hoped for. An audience will take away with it not necessarily a true evaluation of the quality of the film, but an *impression* of how it looked according to the conditions under which it was presented. So important is this psychological impression, that it is worthwhile for us to devote an entire chapter to the subject of correct presentation and projection of motion pictures.

There are many who believe that it is only necessary to thread a film through the projector, turn off the lights and start the machine in order to satisfactorily present a film. But actually, correct presentation amounts almost to a science in itself. It depends upon the nature and size of the audience, the equipment available, and the room in which the film is to be shown.

### The Projector

The projector is the most important element in the presentation of a picture, since it is the actual mechanical means whereby an audience is enabled to view the film. Its selection, operation and maintenance therefore becomes of primary importance to those concerned.

In selecting a projector, there are a number of important points to be taken into consideration. A careful analysis of the several excellent machines on the market will reveal to the prospective purchaser exactly what unit and lens will best suit his needs and the requirements of his audience. Generally speaking, *you get what you pay for*. The less expensive machines put out by the more reputable manufacturers will usually do very nicely for the showing of home movies to small living-room audiences. On the other hand,

the presentation of professional sound and color movies before large audiences will require more versatile and therefore more *costly* equipment.

The selection of a sound projector (and it is presumed that *sound* is desired) will depend primarily upon the average size of the expected audiences. Starting at the bottom, we find that the present market offers a variety of miniature, light-weight portable projectors which are especially desirable because of their compactness and the ease with which they can be carried about and set up. These machines, which usually consist of one case containing both projector and loudspeaker, were designed primarily to show pictures to groups of from 1 to 15 people.

They are ideal for the traveling representative who wishes to take his projector right into a client's office and set it up on his desk. The unit contains a small screen about 1' by 1½' onto which a brilliant image can be thrown from a distance of about six feet, even in a room which is not completely darkened. A larger but dimmer image may be thrown onto a standard screen by moving the projector farther back. Since the bulb in this class of projectors averages only 300 watts, however, the brightness of the image falls off sharply when the projector is set up too far from the screen.

The second class of projectors, known as *standard* units, are those whose light source ranges from 500 to 1000 watts, and which usually consist of a projector and loudspeaker in two separate cases. This class of projector is the most popular for showing to average audiences since it combines adequate brilliance and sound fidelity with convenient portability. Depending upon which lens is used, it is suitable for showing films before audiences numbering up to 200 people.

Most projectors of this class come equipped with a standard 2 inch lens, although other lenses ranging from ⅝ inch to 4 inches are available for use under special projection conditions. The ⅝ inch wide-angle lens enables you to project the largest possible image with the greatest degree of brilliance, since the projector is placed relatively close to the screen.

The third group consists of high-intensity carbon-arc projectors for use in large

auditoriums where films are to be projected before audiences of several hundred people. This truly professional type of projector enables the projectionist to fill a full-sized standard theatre screen with a brilliant 16 mm. image. Such machines are, however, several times more costly than standard 16 mm. projectors, and a good deal less portable. Moreover, special transformers must be used to provide the increased amount of current necessary for the carbon arcs.

On the basis of the above information, it is wise to select your projector according to the size of the average audience to which you will want to appeal. Other factors to be considered are sound fidelity, simplicity of threading, ruggedness of construction (an important factor when machines are to be transported frequently), and availability of spare parts.

### The Screen

The selection of a screen is second in importance only to the selection of a projector, since the quality of the reflecting surface has much to do with how the film will look when projected. For home movies, almost any surface such as a wall or sheet will do nicely, but if a film is to be projected before a large audience in a professional manner, a screen of good quality should be used.

We shall consider first portable screens of the type that can be rolled up and transported from place to place. These are manufactured with folding stands so that they can be conveniently set up anywhere or with hangers so that they can be hung up on a wall. They come in a variety of sizes and surfaces.

One of the most popular screens is the type having a flat-white painted surface which provides an average amount of reflectability for normal throws. The principle advantage of this surface is its durability and the fact that it can usually be washed with soap and water when it gets soiled. A second type is that which is coated with silver paint, a surface having a greater degree of reflecting power than the white paint when new, but which is somewhat less durable. The average silver screen can, however, be re-surfaced when it becomes dull or tarnished.

The third, and currently most popular type is the *beaded* screen which, as the name implies, is a white surface coated with minute colorless glass particles. This type of screen provides a maximum of brilliance, since the glass particles reflect a high percentage of the projected light. The one disadvantage is that the beads tend to fall off of the screen with continued use, and the base must be re-surfaced periodically.

For permanent installations, the perforated screen is widely used, since the speaker can be placed behind it and the sound will seem to come directly from the screen. Any one of the other surfaces



—white, silver or beaded—can, however, be satisfactorily used if the speaker is to be placed outside of the screen.

### The Auditorium

We shall call the room in which the film is projected the *auditorium*, even though it is often considerably less imposing than this title would suggest. Usually, the projectionist has very little control over the type of room which is to serve as his auditorium—but let us suppose that he *does* have a choice, in order that we may examine the ideal conditions for the projection of a film.

Firstly, the auditorium should be suited to the size of the audience. A room that is too small is obviously uncomfortable for all concerned. A room that is very much too large will often result in undesirable sound reverberations as well as a loss of the intimate atmosphere which so often contributes to the most favorable audience reaction.

A room which is free of pillars, posts or other obstructions is to be preferred over one in which such obstacles might interfere with the view of the screen. A room with proper air-conditioning and temperature control will aid greatly in putting the audience at ease.

Any auditorium selected for the projection of a film should be capable of being darkened to the greatest possible degree, since there is nothing more disturbing than the "washed out" image which results when stray light filters into the room. In the daytime, venetian blinds with drapes at the sides will usually shut out most of the light, although curtains of opaque material that can be drawn over the windows give an even better result.

A sufficient number of comfortable chairs should be provided, and these should be staggered so that no member of the audience will be forced to look around his neighbor's head in order to see the screen. Ash trays should be provided whenever possible for those who wish to smoke while the film is being projected.

In a permanent auditorium, exit lights should be installed, and it is always a good idea to inform the audience where exits are located in case any doubt should exist.

### Setting Up

The first step in setting up is to decide the relative positions of audience, projector, speaker and screen. These locations will usually depend upon the physical geography of the auditorium, and should be plotted to make the most effective possible use of the available space.

Whenever possible, the projector should be located *behind* the audience (instead of between them and the screen) so that the noise from the motor will not interfere too greatly with the reception from the speaker up front. Always leave a space between the projector and the back wall

so that late-comers will not have to pass in front of the lens in order to get to their seats. Fill your screen with the image whenever possible, but do not move your projector back so far that too much brilliance is lost. The distance from projector to screen will depend upon the size of the audience as well as upon the focal-length of the projector lens you are using.

In order to insure visibility from all parts of the auditorium, the screen should be mounted so that it is several feet above the heads of those sitting in the front row. For best effect, the speaker should be placed just below the screen or directly to one side of it. *Never mount the speaker behind the audience.* If you have dual speakers they may be mounted on either side of the screen and beamed down toward the audience. Do not place the speaker on the floor, since the sound will be muffled by the audience. Place it on a chair, table, or stand that is even higher. The closer the speaker can be placed to the screen, the more natural will be the illusion of direct sound.

In arranging your chairs, be sure to leave a sufficient clear path for the projector beam, so that no one's head will interfere with the image. Before the audience appears, have your machine completely set up, focused and framed. It is quite unprofessional to have to make any mechanical adjustments once the au-

dience has arrived. Be sure that your extension cords are arranged out of the way so that the plug cannot be kicked out of the wall in the dark. Before threading the film through the projector, clean the aperture gate carefully with a camel's hair brush so that it is free of lint and grit.

There are several factors to be considered in regulating your sound. First, be sure you have your amplifier switch on so that the tubes will have time to "warm up" before you start to run the film. In setting your volume, remember that an audience will absorb a certain amount of the sound and that you will need more volume in a full room than in an empty one. Allow for this factor in regulating your volume before the audience arrives.

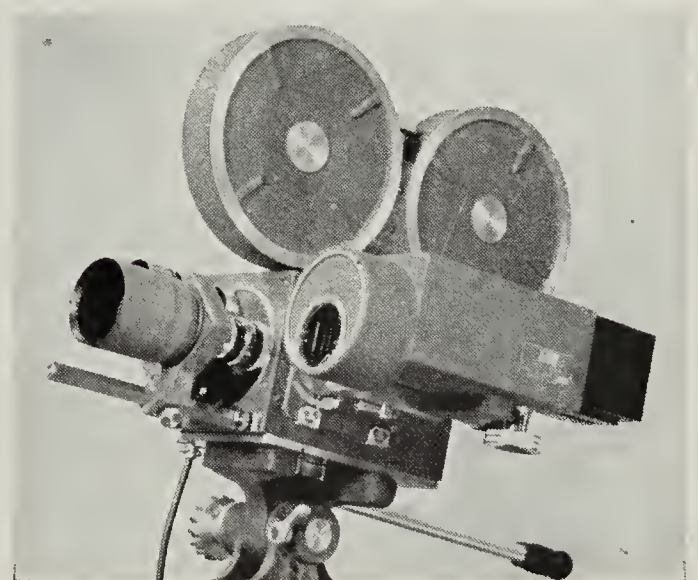
Regulate the *tone* of your sound according to the acoustics of your auditorium and the size of the audience. In a room lined with sound-absorbent facing or draperies, the tone will seem relatively "dead" unless you adjust it for more *treble*. A room with hard smooth walls, floor and ceiling will create harsh reverberations unless you regulate your tone more toward the *bass* side. A well-filled room will require more *treble* than one which is partially filled.

In running your film, have someone stationed near the light switch so that you will be able to start the projector as soon as the auditorium has been darkened.

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Turn on your motor first and then turn on your lamp as soon as you see the end of the leader pass through the gate. Always thread your machine so that you will start back on the leader a bit, in order that your projector may gain sufficient speed for the correct rendition of the opening fanfare of sound.

When the film has ended turn off your lamp just as the end title fades out; then turn off your sound as the music ends; and finally turn off your motor as the tail end of the film clears the gate. Instruct your man at the auditorium light switch to turn on the lights as soon as you cut your projector lamp.

It is necessary here to say just a bit about proper maintenance of projector and film. The projector gate should be

carefully cleaned, first with a lintless cloth and then with a camel's hair brush, before and after each showing. The lens should be cleaned with a liquid cleaner and lens tissue after every three or four screenings. The projector should be oiled periodically as per the recommendations of the manufacturer. Always carry a spare projection bulb, fuse, take-up spring and exciter lamp in your projector case. Check your equipment carefully before setting out to make sure that you have a take-up reel of sufficient capacity as well as an extra extension cord. It is also wise to carry with you a small film splicer.

The film itself should be carefully cleaned with an approved liquid film cleaner after every two or three showings. It should be checked carefully for breaks,

bad splices and torn sprocket holes after every showing, and these should be promptly repaired. Between showings, it is wise to store the film in a dust-free metal container. Make sure that only a competent operator is allowed to project your film, since a great deal of costly damage to the print can result if it is improperly threaded into the projector.

The separate points relative to the presentation of a picture may seem trivial, but they can greatly influence an audience's impression of your film one way or the other. The audience will evaluate the film in terms of how it looked when presented for *them*. Give your film a "break" by seeing to it that projection conditions are as nearly ideal as you can possibly make them.

NEXT ISSUE: Part 20—*Distributing Your Film*.

## EVERYTHING PHOTOGRAPHIC

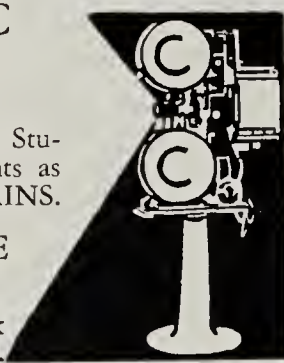
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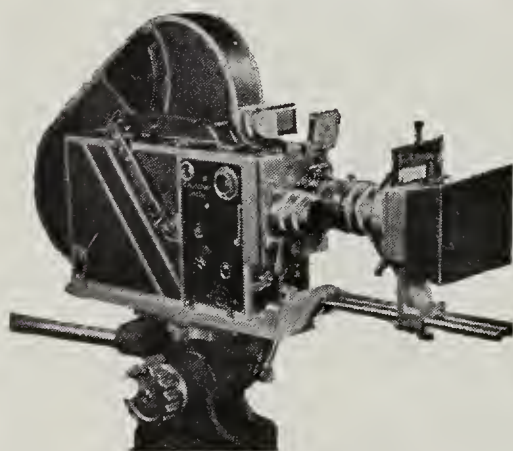
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### Phelps Again Heads PSA

Charles B. Phelps, Jr. of Grosse Point, Michigan, has been re-elected president of the Photographic Society of America to serve the 1947-49 term. John G. Mulder and Victor H. Scales function as vice presidents; Mrs. Anne Pilger Dewey was re-elected secretary; and Charles Heller was re-elected treasurer.

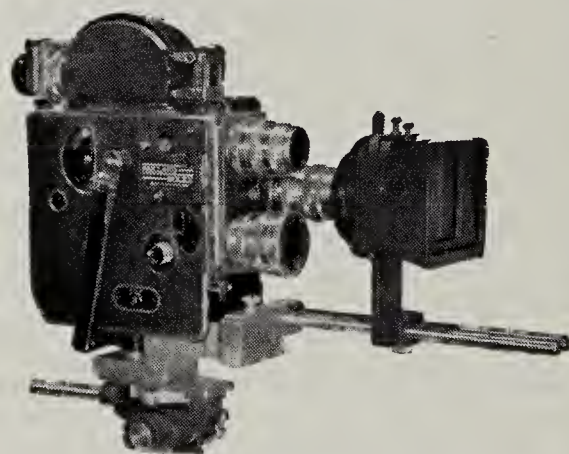
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# AMONG THE MOVIE CLUBS

## Milwaukee Amateur

Annual exhibition of contest films was staged by Amateur Movie Society of Milwaukee at the Red Arrow Club on November 12 and 26. Club members voted on the entries with the following results: 16 mm. Division—first prize: "The Magic Carpet," by Mr. and Mrs. William Rheingans; second: "Blue Horizons," by Walter Chappelle; third: "As the Spirit Moves," by Mrs. Erma Niedermeyer; fourth: "Our Trip West," by Glen Evans. 8 mm. Division—first: "No Soap," by Mrs. DeLylia Mortag; second: "Three Fishermen," by Joseph Salerno; third: "Speed Thrills," by Earl Peychal; fourth: "Torcheat," by Marley Bready.

Members nominated for officers for the coming year include: president, Richard J. Franzel and Robert E. Lees; vice president, Fred W. Domrose and Robert H. Jansen; treasurer, Howard Perschbacker and Harold F. Sonneman; secretary, Mrs. W. Chappelle and Miss Naomi Gauger.

## Los Angeles Eight

Thirteenth annual banquet of the Los Angeles 8 mm. Club was held on evening of December 6 at the Breakfast Club with 162 members and guests attending. Highlights of the evening were presentation of incoming officers, announcement of winners in annual contest, and presentation of trophies and prizes.

Sylvia Farley won first prize in the film contest with her "Little Women"; with Mildred Caldwell second, for "Green Gold," and Milton R. Armstrong third, for "Memories Linger On." Armstrong also received the Horton perpetual trophy for the best vacation picture of the year. Contest drew 20 entries for the 15 prizes donated.

## New York Metropolitan

Film program for the November 20 meeting of Metropolitan Motion Picture Club of New York, held at Hotel Pennsylvania, comprised: "Summer Serenade," by Charles Benjamin; "Temagami Fishing," by Fred D. Koehler, Jr.; and "Wonderland Alaska," by Robert Allyn Rose. Latter subject was presented with background music and commentary on magnetic tape.

## Washington Cinematographers

First group of members' films entered in the annual club contest were exhibited at the November 17th meeting of Washington (D. C.) Society of Amateur Cinematographers. Entries included: "City of Destiny," by Ted Sarchin; "Trees of Autumn," by Don Sutherland; "Dun-Loring Cotillions of 1947," by Joe Gray; and "Jewels in the Sky," by Harold Wagar.

## Utah Cine Arts

Al Morton, founder member of Utah Cine Arts Club of Salt Lake City, was the winner of the Hiram Percy Maxim Memorial Award for his color film, "Adventure on the Colorado," a picture record of his pleasure trip down the Colorado River last summer. Morton has frequently received recognition for his outstanding amateur films in the past.

Annual meeting and election of officers of Utah Cine Arts was held on December 10 at the Newhouse Hotel with films exhibited including: "Little Co-ed," by Mrs. Al Morton; "Sun Valley Holiday," courtesy Union Pacific; and two comedy films.

## Los Angeles Cinema

Annual banquet meeting of Los Angeles Cinema Club was held on evening of December 1 at Los Angeles Breakfast Club with nearly 450 members and guests attending. In addition to installation of officers for the coming year, headed by new president, James H. Mitchell, announcement was made of the winners in club's annual contest for silent and sound subjects. In the silent division, Stan Midgeley was adjudged the winner for his "Cycling Through Yellowstone"; with Charles Peters taking second place for his "Tripping Through the Canadian Rockies"; "Timber," by William J. Keim, took third; and Mrs. Mildred Caldwell's "In Our Garden" was fourth. Jack Helstowsky won first prize in the sound division with "Unmarried Husband," and "Aloha Time," by Mrs. E. B. Kellam won second spot. The first two prize winners were exhibited at the meeting. Mr. and Mrs. Jack Shandler donated \$100 as prizes, which was split between the two winners.

President Mitchell disclosed that the club roster comprised total of 314 members; and disclosed that meetings of the coming year would be balanced to include a technical session with the regular film programs.

## Brooklyn Amateur

Terry Manos was featured guest of the December 3 meeting of Brooklyn Amateur Cine Club held at the Neighborhood Club, and exhibited his "Farm Frolics," "It's All Over," and "Terry's Adventures." Also on the program was Manny Lovitch's prize-winner, "Spring Interludes," and repeat showing of General Electric's film on indoor lighting, "Family Album."

At the December 17 meeting, "Desert Victory" consumed major portion of the program, with new member, George Wahl, also showing his "New York Oddities."

## New York Eight

First prize in annual film contest of New York Eight MM. Motion Picture Club was awarded to George Valentine for his "Scenario for Three." Edward Roessen took second place with "Down on the Farm"; while Ben Spanier's "Cynthia Is Freed" tabbed third honors. Next contest, to close at February meeting, will be devoted to entries not previously submitted in a contest by members.

New feature of club meetings is "The Hour of Gab," with members gathering an hour before start of sessions for informal group discussions of filming problems, equipment and exchange of ideas.

In addition to a symposium on "The Material of Which a Movie Is Made," film program for the December 15 meeting comprised: "Inside Story of the Outside Cover," by George Valentine; and "Week End Estate," by Lou Lind.

## Philadelphia Cinema

Christmas subjects appropriately composed the film program of the December 9 meeting of Philadelphia Cinema Club held in Little Theatre of Franklin Institute. Program included: "Christmas, Inside and Out," by Walter J. Brobyn; "Christmas Time at Our House," by Henry DeLuca; and "Christmas With Eileen, Jim and Bill," by James J. Haggerty. John Mansure exhibited his film, "Lullaby"; and a demonstration was given of the Webster wire recorder, with musical selections recorded by Miss Claire Rasch and Miss Betty Jarvis and immediately played back for the audience.

## Alhambra La Casa

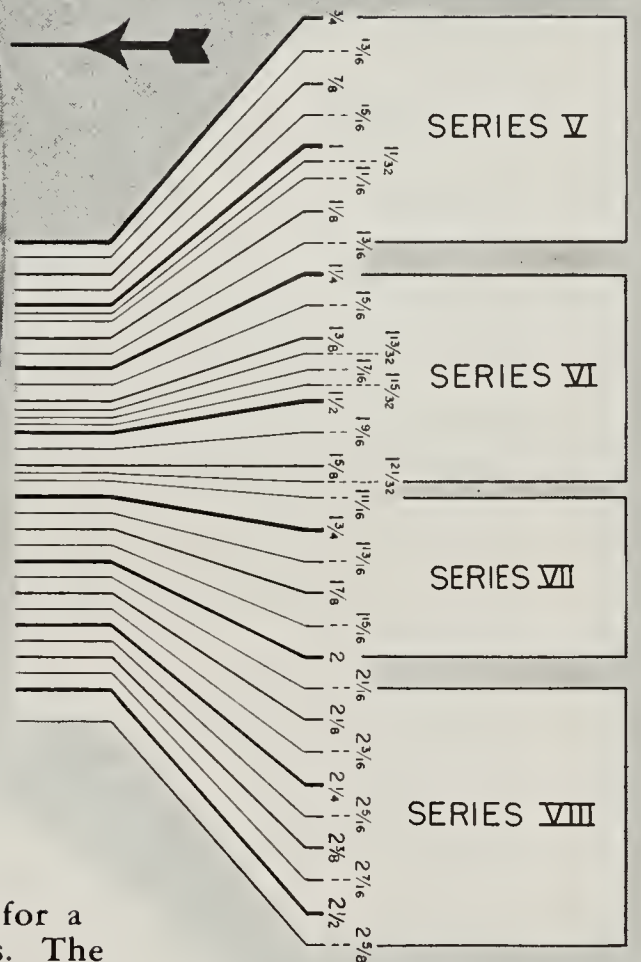
December 15 meeting of La Casa Movie Club of Alhambra, Calif., held at the YMCA, provided a fine program of member films including: "Home Christmas," by A. N. Bierkle; "Catalina Bird Farm and Seal Rock," by Mrs. James B. Lewis; "Christmas at Our House," by Mr. and Mrs. F. A. Carnahan; "No Reservations Required," by Mr. and Mrs. R. A. Battles, and "Twas About Christmas," by Charles J. Ross.

## San Francisco Cinema

Annual dinner meeting and election of officers for Cinema Club of San Francisco was held on December 16 at the Women's City Club. Officers submitted by the nominating committee were: president, Ben Nichols; vice president, Ben Hechinger; secretary, Mrs. Violet Neuenberg; treasurer, Lloyd Littleton; directors-at-large, Leon Gagne, Dave Redfield and Charles D. Hudson. Film feature of the evening was Gagne's "Everchanging California."



# Fit your lenses for wider-range movie making



**Kodak Combination Lens Attachments** provide the simple, economical, *flexible* solution to the problem of wider-range movie making with both standard and accessory lenses.

These attachments, basically, are threaded rings you screw together to form mounts for filters, close-up lenses, and Pola-Screens. They enable you to use unmounted elements singly or in any desired combination... permit quick interchange or removal of elements at any time. Through a wide choice of Adapter Rings you can fit the assembled attachments to most 8mm. and 16mm. camera lenses, filters in W or Z Mounts being available for other lenses.

The above illustration shows how to select attachments. The scale indicates the lens-barrel diameter and the series number by which you order the

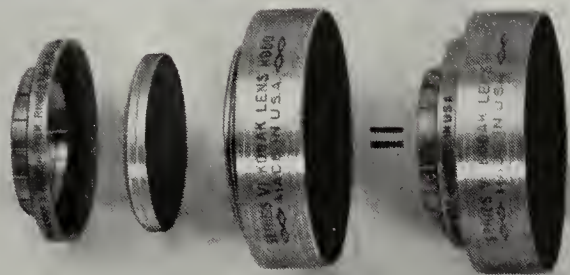
Adapter Ring for a particular lens. The series number is all you need for the other attachments. Once you've selected the necessary Adapter Rings, chances are you can employ one set of attachments for several of your lenses.

Using this scale, why not "try your lenses on for size" right now? Your Kodak dealer will be glad to help you with the final fitting and to recommend a suitable assortment of attachments for your particular filming requirements. Plan on seeing him soon.

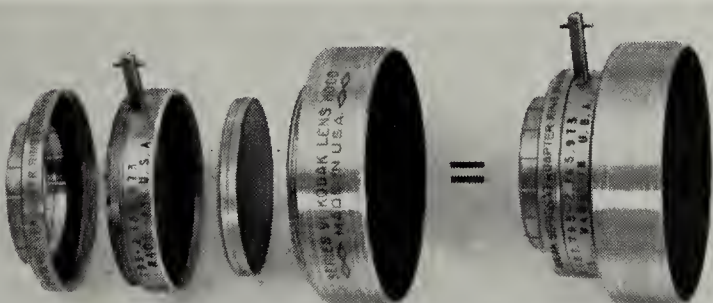
## FILTERS, CLOSE-UP LENSES, POLA-SCREENS, LENS HOODS — "TAILOR-MADE"



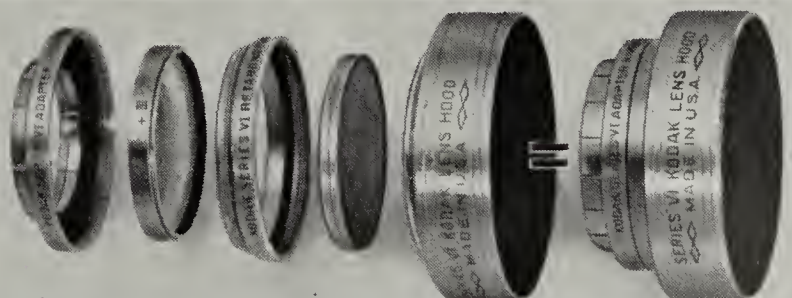
Adapter Ring, Filter Disk, and Adapter Ring Insert.



Here a Lens Hood "doubles" as the retaining element.



A Pola-Screen is easily added to the assembly.



A Portra Lens takes the place of the Pola-Screen.

EASTMAN KODAK COMPANY, Rochester 4, N. Y.

"KODAK" IS A TRADE MARK

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# "Adventures Of Rudy Crude"

LIVE ACTION and CARTOON

for

COMMERCIAL 16MM. FILM

by B. F. FITZGERALD

THERE'S a new cartoon character abroad on the screen these days. His name is *Rudy Crude*, and he's an animated drop of unrefined oil who romps his way through a 16 mm. color-sound film just completed for the Mid-Continent Petroleum Corp., world's leading producers of 100% paraffin motor oils.

The film, titled "Adventures of Rudy Crude," combines 10 minutes of cartoon animation with 26 minutes of live action to tell a complete story of the refining of motor oil from the ground to the car. Now in release, it is winning enthusiastic audience reaction because of the ingenious way in which humorous cartoon sequences have been used to tell an essentially serious technical story.

The film was produced for Mid-Continent by Bud Woods Productions, Inc., of Tulsa, Oklahoma. It was supervised by L. C. "Bud" Woods, war-time personal cameraman to Gen. Omar N. Bradley; and filmed by Herb A. Lightman, Hollywood writer-director. The production approach goes beyond the scope of the usual industrial film in that it makes skillful use of many studio camera and direction techniques.

## How It All Began

"Rudy Crude" was born several months ago when advertising executives of Mid-Continent were casting about for the most interesting possible way to tell the story of oil refining. They realized that a series of technical processes, no matter how spectacularly photographed, could not hope to sustain audience-attention for a full half hour. They tossed the problem into the lap of the Woods organization, which came up with the fascinating little character dubbed "Rudy Crude." Further story conferences developed "Ruby" Crude, a sexy little girl drop of oil, and seven little "squirts" who were to appear in due time to represent (as Rudy's and Ruby's offspring) the various fractions derived from the crude in the distillation process.

By the time the script was developed, it was decided that 10 out of a total of 36 minutes of the film's running time would

be devoted to the hilarious antics of these appealing cartoon characters. The remainder of the film was to show, by means of radically original camera treatment, the story of oil refining—beginning with the underground exploration for petroleum by seismograph crews, continuing on through every phase of testing and refining at the giant Mid-Continent Refinery, and ending up with shots of the oil being used by motorists, farmers and industries throughout the world.

In order to put this blueprint of production into action, it was necessary to reorganize and expand the Bud Woods Animation Department. Two former Disney animators were engaged to head the department and train other artists in the complicated business of cartoon production. Of the several hundred artists interviewed, only a dozen were found to have the requisite talents for this exacting form of art.

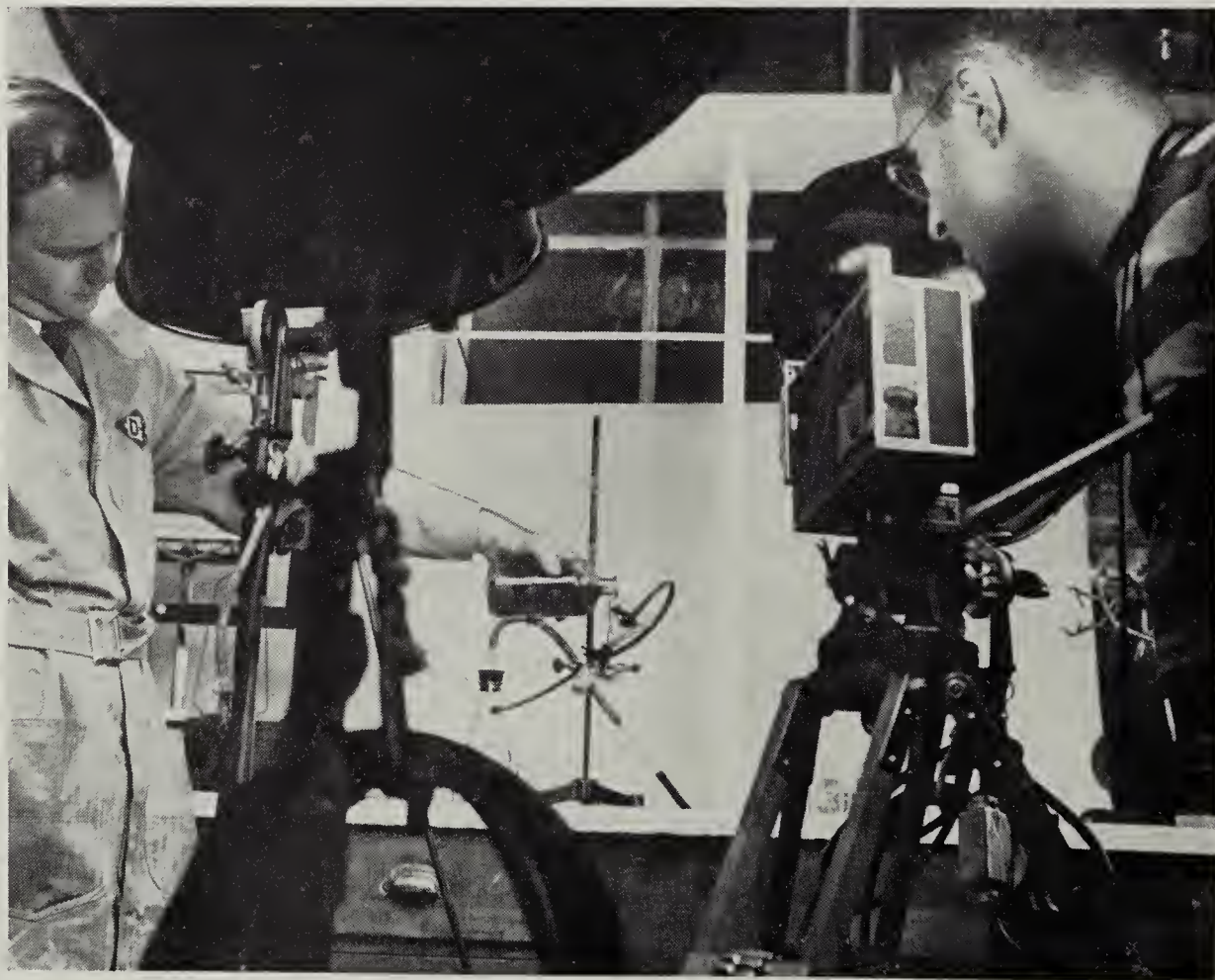
In addition, special animating stands and equipment were devised to insure accurate registration and photography of the thousands of individual paintings that go into the production of an animated cartoon. These devices were specially designed and precisely machined to specifications set up by the animation and camera staffs.

It took 14,692 separate paintings; 16,502 man-hours of work by artists; and 5,197 miles of travel by camera crews to such locations as New Orleans, Kansas City, Southern Oklahoma, West Texas, etc.—in order to put the story of *Rudy Crude* on film.

## A Romance of Oil

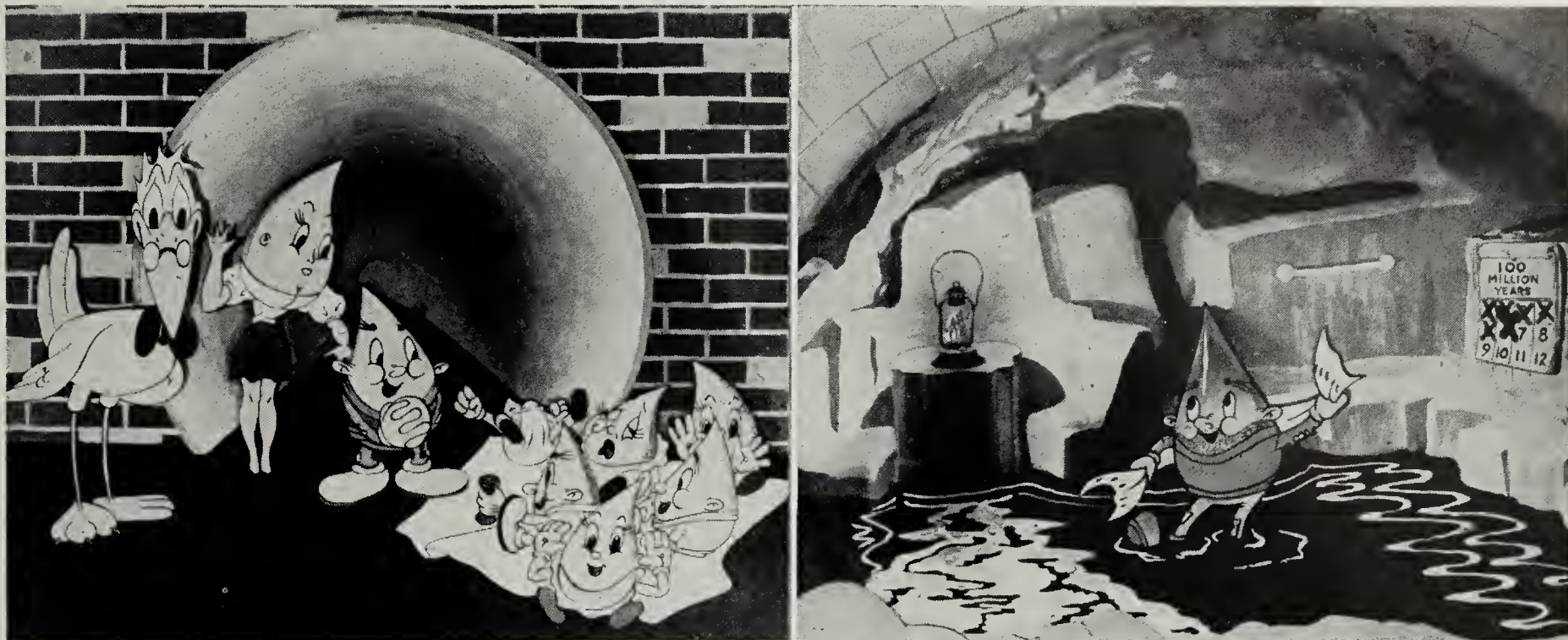
"Adventures of Rudy Crude" blends fantasy, documentary approach and studio production technique to portray a romance of oil refining. Rudy, a cheerful little drop-shaped character with a stubble and patched-up sweater, personifies the rich 100% paraffin-base crudes from which D-X oil is refined. By following his antics and interspersing them with dramatic live-action sequences, the complete story of oil exploration and refining is told.

The picture fades in with a long shot of oil derricks in a producing field. The main title rises out of the ground to superimpose itself on the scene. Then the camera begins to slowly move down through the earth and we see the produc-



The director checks a set-up showing one of the laboratory demonstrations used to explain technical processes of oil refining in "Adventures of Rudy Crude." Filmed in glowing color, the picture utilizes many studio production techniques.





Cartoon scenes from "Adventures of Rudy Crude," 16 mm. color-sound film on the refining of motor oil, produced by Bud Woods Productions, Inc., Tulsa, Oklahoma. (Left) Ruby Crude and the stork conspire to present Rudy (center) with a little of baby oil drops, representing the various fractions distilled from the crude. (Right) In his underground cavern Rudy takes a bath in a pool of oil, dries himself off to the rhythm of a conga.

tion credits carved out of the various strata of rock. A sub-title tells us that "Once upon a time, far, far below the surface of the earth, there lived a little DROP OF OIL." As the camera passes the word DROP, a golden drop of oil begins to ooze out of a crack in the rocks. Falling from one word to another, it develops arms and legs and a cheerful little face. Finally it falls down into an underground cavern complete with flickering candle and a calendar showing the ages of time in units of 100 million years.

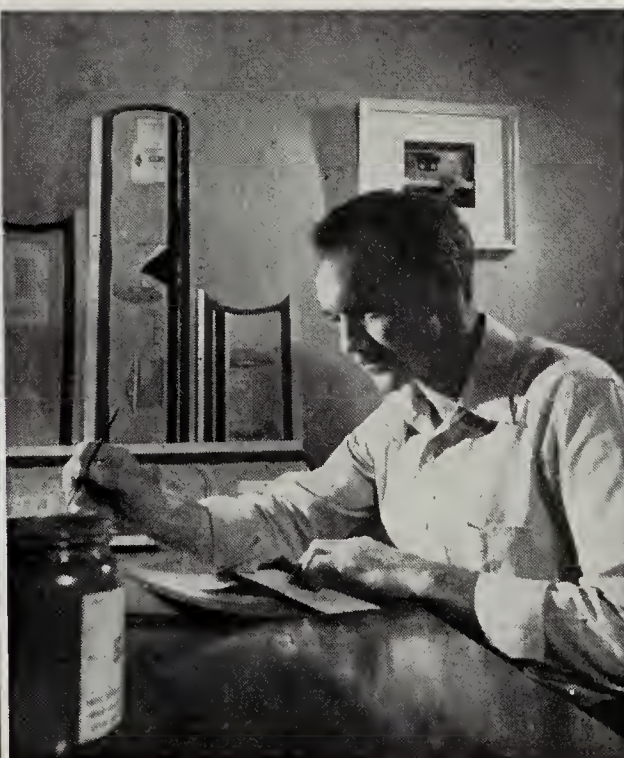
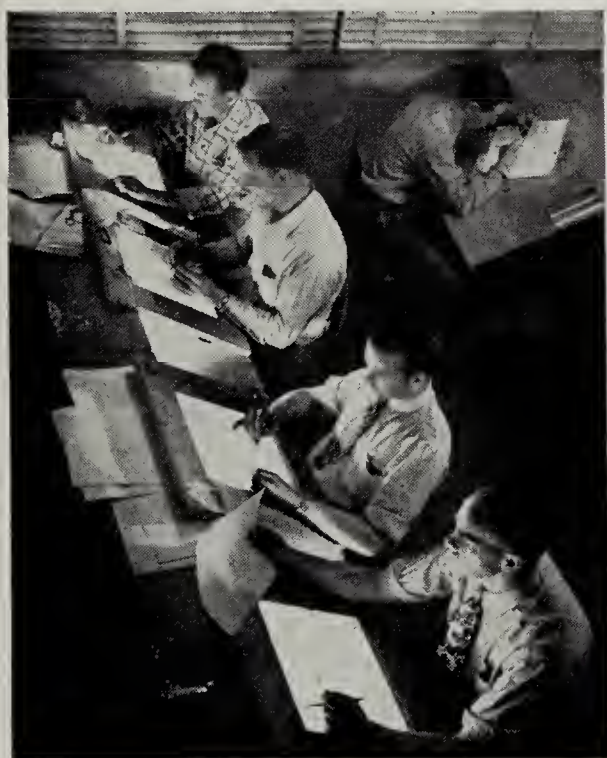
Rudy, having fallen into the pool of oil on the floor of the cave, dries himself with a towel and breaks into a conga routine. He then chalks up another 100 million years on the calendar, as the narrator confides that three sinister villains

are at that moment plotting to get Rudy. We see three devilish looking characters bathed in a red glow with flames leaping behind them as they plot and plan. As the narrator explains that they aren't really villains at all, but geologists plotting the exploration of oil, the scene dissolves to normal lighting of three scientists grouped around a geological survey map. By means of an overhead elevator shot, the camera moves down through the map and out into the field where seismograph crews are setting off charges of dynamite as miniature "earthquakes" to plot the underground structure of the earth.

When oil is located, actual drilling begins, and we then descend once more to Rudy's cave just as the bit of the drill breaks through and raises Cain with Ru-

dy's privacy. Finding no more rocks, the drill turns into a hand which gropes around until it discovers the oil pool. It is then hauled up and a pipe comes down to suck the oil up. Rudy, by now thoroughly scared, cowers behind a rock. The casing, however, changes into a bloodhound, sniffs him out, and then (changing into a vacuum cleaner) sucks him up to the surface.

At this point, the treatment returns to live-action showing the complex pipeline set-up, the various field stations, and the intricate telephone network that links the pumping stations with the refinery. The batch of crude to which Rudy belongs receives the "go-ahead" signal to start its journey to the refinery and we see our hero cheerfully skating through a pipeline



(Left) A section of the cartoon department of Bud Woods Productions Inc. shows animators at work on "Adventures of Rudy Crude." The film features 10 minutes of cartoon animation out of a total running time of 36 minutes. (Center) A background artist paints lengths of "pipeline" scenery used as moving backgrounds in the film. (Right) A cameraman shoots a section of the film's running main title, total length of which was 18 feet. Shown is one of the special animation stands designed for the picture.



which contains hot-dog stands, shops, theatres and gas stations. He has a brief encounter with a nauseous little character called "Droopy Crude," who represents the thin, low-quality crudes that are barred from the line.

By and by he discovers Ruby, a streamlined little girl drop of oil whose well-rounded figure makes his eyes bug out and then turns him into a panting wolf. She, however, is a moral little lady who likes Rudy fine, but will permit no familiarities until she has that ring on her finger. To satisfy both the lady and the censors, he allows himself to be dragged off

to the "Pipeline Parson" for a proper wedding ceremony, after which the newlyweds continue on toward the refinery.

The huge Mid-Continent Refinery is introduced with a sweeping panoramic shot that shows the 800 acres of refinery towers looming against the modern skyline of Tulsa, Oklahoma. This dissolves to a montage of spectacular angle shots of the refinery structures and equipment, finally centering on the first of the refining processes where Rudy is discovered sweating out the flames of the giant pre-heater furnace. Right about then, Ruby and the stork conspire to present him with

seven baby drops of oil which represent the various fractions distilled from the crude.

The camera then follows Rudy and Ruby and their little squirts through the fractionating tower, to show exactly how crude is broken down into gasoline, naphtha, kerosene, fuel oil, and light, medium, and heavy motor oils. The bulk of the picture from that point on takes up the many technical processes involved, blending live-action with riotous sequences of Rudy and the kids as they get polished up for the motors of America.

### An Original Slant

What sets "Rudy Crude" distinctly apart from the usual dry-as-dust commercial film is the fact that, besides telling a complex technical story, it manages to provide 36 minutes of walloping good entertainment. Furthermore, while making complicated processes thoroughly understandable to the layman, it does not "talk down" to the oil engineer.

This middle-of-the-road technique is the result of a pre-planned approach and careful scripting. Each intricate process is introduced by a cartoon sequence which burlesques the operation. For instance, the de-waxing process shows Rudy pulling hugs blobs of wax out of his youngster's ears; the sequence in which additives are blended with the oil has him battling to make the kids take their vitamins. Each actual operation inside the refinery is then shown in live-action, and further explanation is accomplished through simplified lab demonstrations which break all the technicalities down into easily understandable language.

Gags for the cartoon sequences resulted from a series of spirited story conferences, during which broad comedy was slanted to tell the technical story. The script for these sequences consisted of exposure sheets which broke every second of action down into 24 separate drawings. As each sequence was drawn, it was filmed in black and white "rough" form to check the smoothness of the action. Finally, the cells were inked, painted and photographed, one by one, against a series of colorful and humorous backgrounds.

The live-action portions of the film were precisely scripted, with each scene described in detail and accompanied with a frame sketch of the composition. Transitions (such as cuts, dissolves, wipes and fades) were carefully selected to link the various sequences of the story tightly together. As a result, the film moves along at a lively pace with perfect continuity.

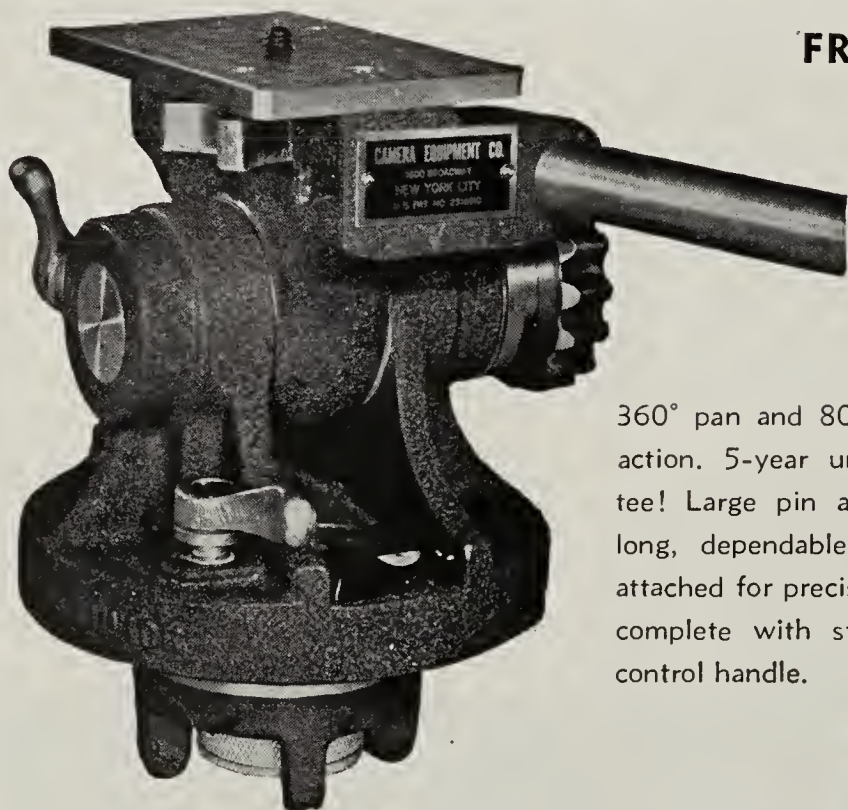
In filming the story, a great deal of attention was paid to *color direction*. Not only the cartoon sequences, but the live-action portions as well were designed to make the most dramatic use of color. In line with this approach, many units of the refinery were specially repainted to conform with effects planned by the director.

# Super Smooth Pan and Tilt

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## "PROFESSIONAL JUNIOR"

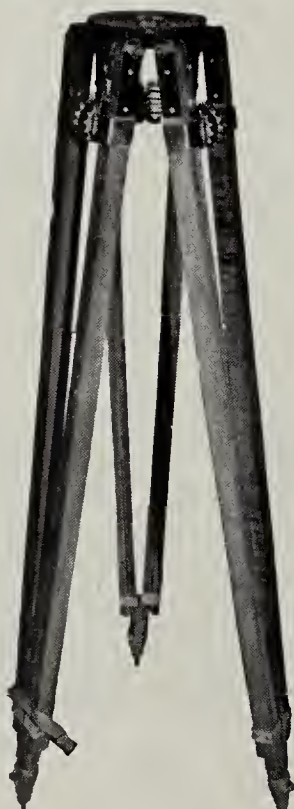
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"Professional Junior" friction removable head interchangeable with Geared Pan and Tilt tripod head. Both fit "Professional Junior" standard tripod base, "Hi Hat," and "Baby" all-metal tripod base. Top plate of each takes 16mm E. K. Cine Special, with or without motor; 35mm DeVry; B & G Eyemo, with or without motor and 400' magazine, and with or without alignment gauge; any type of 16mm hand-held camera, Speed Graphic or 8x10 View, and other still cameras.

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This is the first time such pains have been taken to "glamorize" a drop of oil.

### The Camera Scores a Hit

In a generally excellent production, the beautiful live-action photography of "Rudy Crude" manages to stand out as the film's most striking feature. The camera-work shows a clean, modern approach that is emphatic as well as artistic. It takes fine advantage of the strong compositions which a refinery offers. Dramatic interior lighting lends real pictorial interest to processes that might otherwise have seemed commonplace. The use of colored light is especially well-handled.

Camera crews working on the picture encountered many unique photographic problems which had to be solved by expedients that are not in any of the books.

The script called for a sequence showing the interior of the blazing pre-heater furnace, with huge jets of flame shooting the length of the structure. The shots taken inside this furnace are among the most spectacular in the entire film, but special precautions had to be taken to keep the intense heat from buckling the film and melting the cement between the lens elements.

During the filming of oil drilling sequences in the field, cameramen had to climb a narrow steel ladder 180 feet to the top of an oil derrick, with their cameras slung around their necks. At the top, the operating cameraman lowered his body into the well of the tower and hung out into space with the camera while assistants sat on his legs to keep him from falling in.

In one refinery sequence, the crew was called upon to shoot a close-up inside a huge revolving drum that was completely enclosed except for tiny glass peepholes. Getting enough light into the tank to make a color exposure of the moving drum presented an almost insurmountable problem—one which was finally solved by dropping glass-shielded floodlights on cords down through the peepholes.

Each composition in the film was designed both for artistic effect and to show the subject most clearly. Wide-angle shots and low camera angles give the photography a dramatic quality, while extreme close-ups define even the smallest details. The moving camera is used very skillfully, and a number of complex *elevator* and *dolly* shots add real movement to the story.

The majority of the film's footage was interior and a great deal of light was required to illuminate some of the huge sets. Special transformers had to be installed to handle the electrical load demanded by the numerous lighting units. Careful regulation of *color temperature* under widely varying conditions (during which outdoor and artificial light were frequently mixed) kept the color quality consistent throughout.

The film was edited with a pace which

complements the active style of the photography. *Montage* is used to good advantage, and the story moves along with a tempo that keeps audience interest high. An excellent original musical score by Emil Velazco is perfectly keyed with the changing action, while clever sound effects and deft narration further enhance the pictorial presentation of the subject.

The film was recently given a "Hollywood premiere" at the *Orpheum*, Tulsa's largest downtown theatre—a special 16 mm. arc projector being used to fill the huge screen. "Adventures of Rudy Crude" has been booked for showing before numerous technical societies, civic clubs, schools and colleges—as well as for 500 D-X dealer meetings throughout the Mid-Continent area (which covers 18 states). Reviewers have called it "the most interesting color sound movie ever produced on the oil industry."

### S. O. S. Cinema Supply Corp. Adds Production Equipment

S. O. S. Cinema Supply Corporation of New York now has a well-organized department of motion picture production equipment, which includes studio, recording and laboratory apparatus. Latter includes production cameras, blimps, rotamulators, cranes, dollies, kliegites, background process projectors, translucent screens, recorders, galvanometers, moviolas, sound printers, and complete developing machines. Company maintains an export department to take care of foreign customers.

### Victor Projectors Stolen

The Chicago Police Department has reported the following Victor 16 mm. Model 55 Lite-Weight projectors stolen from a motor freight carrier in the Chicago area:

253956, 255002, 255012, 255013,  
255017, 255019, 255021, 255024,  
255043, 255044, 255045, 255046,  
255047, 255048, 255049, 255050,  
255058, 255064, 255066, 255067,  
255069, 255085, 255087, 255165.

Any trace of these stolen machines should be reported to Chicago Police Department or Victor Animatograph Corporation, Davenport, Iowa.

### Film Defect Indicator From Bell & Howell

New film defect indicator is being introduced by Bell & Howell, designed for rapid and thorough mechanical inspection of 16 mm. sound and silent film perforations. Product, entirely different from similar device offered before the war, will greatly aid film inspection by film libraries, laboratories, and advanced amateurs.

### Tilting Films In Demand

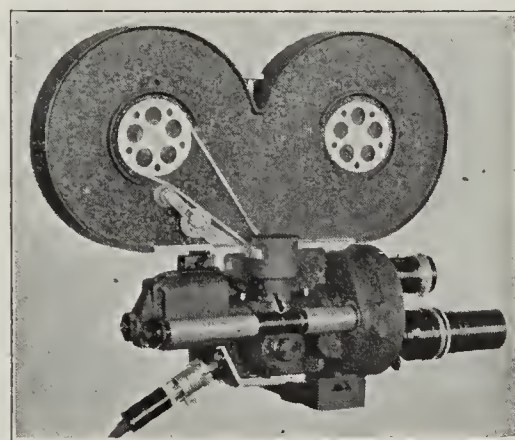
Bardwell & McAlister, Inc., Hollywood manufacturers of the Mult-Efex Titler, report that the demand for their 300 foot 16 mm. color film which demonstrates how the elaborate title effects of professional motion pictures are made, is increasing sharply.

This film demonstrates how such effects as zooms, fadeouts, runarounds, forward and backs, flip-flops and many other special titles employed in the major studios, may be duplicated by the amateur with a Mult-Efex.

The film is available on request to all camera clubs and dealers from the manufacturers or any of the following distributors: Arel, Inc., St. Louis, Missouri; Craig Movie Supply, Los Angeles, California; Eastern Photo Supply, Boston, Mass.; Eastman Kodak Stores Co., Chicago, Illinois; Eastman Kodak Stores, Inc., Los Angeles, California; Eastman Kodak Stores, Inc., New York City; Hornstein Photo Sales, Chicago, Illinois; Raygram Corp., New York City; and Willoughby's, New York City.

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Ready to Go—1/2 PRICE

**WALL STUDIO CAMERA** with B & H silenced shuttle; 7 lenses; Mitchell type viewfinder; sunshade & mattbox; 12V motor; Akeley Gyro tripod; new Modulite galvanometer; amplifiers; mike, batteries, cables & trunks, entirely rebuilt.....\$5,475

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**WALL STUDIO CAMERA** with B & H silenced shuttle; 5 lenses; direct focusing tube; 2 magazines; 12V motor; B & H inverted viewfinder; B & H geared tripod; quartz slit; recording glow-lamp & cases, all rebuilt.....\$2,990

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### S.O.S. Cinema Supply Corp.

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## Record Kodak Wage Dividend

An estimated \$11,650,000 wage dividend will be distributed by Eastman Kodak to 50,000 employees in the western hemisphere within the next few months, according to company announcement. The wage dividend is the largest in the 36 year history of the plan at Kodak, and employees with five or more years' service will receive approximately six times their weekly salary as bonus.

## STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of THE AMERICAN CINEMATOGRAPHER published Monthly at Los Angeles, California, for October 1, 1947.

State of California, } ss.  
County of Los Angeles }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Walter R. Greene, who, having been duly sworn according to law, deposes and says that he is the Editor of the AMERICAN CINEMATOGRAPHER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and address of the publisher, editor, managing editor, and business managers are: Publisher, A.S.C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif.; Editor, Walter R. Greene, 1782 N. Orange Dr., Hollywood 28, Calif.; Managing Editor, Walter R. Greene, 1782 N. Orange Dr., Hollywood 28, Calif.; Business Managers, Marguerite R. Duerr, 1782 N. Orange Dr., Hollywood 28, Calif.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) A.S.C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif., wholly owned by the American Society of Cinematographers, Inc., a non-profit corporation whose address is 1782 N. Orange Dr., Hollywood 28, Calif. Officers of the American Society of Cinematographers, Inc., are: President, Leon Shamroy, 1782 N. Orange Dr., Hollywood, Calif.; 1st Vice President, Charles G. Clarke, 1782 N. Orange Dr., Hollywood, Calif.; 2nd Vice President, Wm. V. Skall, 1782 N. Orange Dr., Hollywood, Calif.; 3rd Vice President, Lee Garmes, 1782 N. Orange Dr., Hollywood, Calif.; Executive Vice President and Treasurer, Fred W. Jackman, 1782 N. Orange Dr., Hollywood, Calif.; Secretary, Ray Rennahan, 1782 N. Orange Dr., Hollywood, Calif.; Sergeant-at-Arms, John W. Boyle, 1782 N. Orange Dr., Hollywood, Calif.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is—(This information is required from publishers of daily, weekly, semi-weekly and triweekly publications only.)

WALTER R. GREENE  
Editor

Sworn to and subscribed before me this 1st day of October, 1947.

(Seal) Franklin H. Mills  
Notary Public  
(My commission expires July 3, 1949.)

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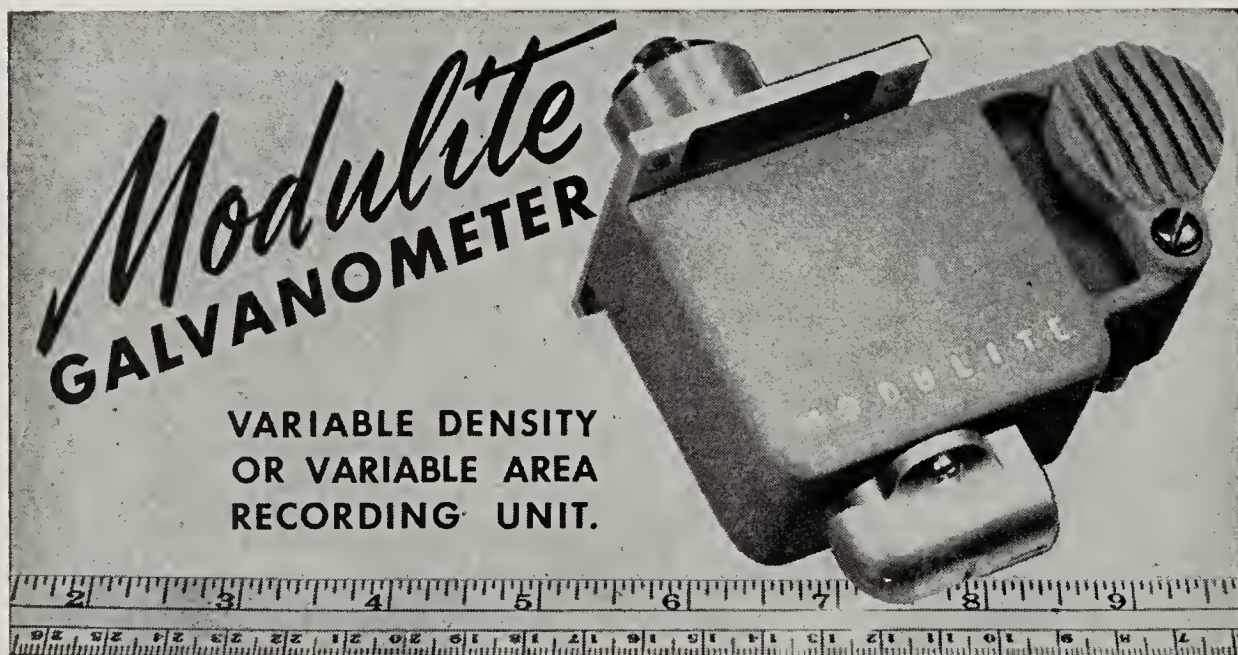
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## New Estimate of Colors Visible to Naked Eye Made by Kodak Scientist

How many separate colors can you distinguish with your own eyes in daylight?

Dr. David L. MacAdam, specializing in research on color vision at Kodak Research Laboratories, has obtained a new estimate which puts the figure in excess of 17,000.

He bases his estimate on the 17,000 distinct colors of equal brightness which are detectable when observations are made with a precise optical instrument. To this figure he adds the fact that, when large pieces of colored paper are observed with the naked eye, roughly 50 percent more colors can be distinguished than by the finest optical means.

Under similar favorable conditions only about 500 distinct shades of gray—ranging from black to white—can be detected.

Dr. MacAdam said that when color is introduced, each shade of gray in the middle range of the scale of about 500 shades between black and white is expanded up to 17,000 times.

For Kodak researchers working for superior reproduction of color in pictures, this means that in the change-over from black-and-white to color photography, they must contend with an increase from 500 to several million distinguishable differences.

The ultra-fine differences in color studied in the laboratory are known to scientists as "distinct chromaticities"—which are the distinguishable features of color when brightness is disregarded.

In arriving at his new figure Dr. MacAdam estimates that there are about 250 distinguishable colors in the spectrum, plus 10,000 distinguishable tints of spectral colors and 7,000 additional colors, like purple, which do not resemble any spectral colors.

## New B&H District Managers

Perry M. Thomas has been appointed mid-western district manager for Bell & Howell Company, while Richard H. Pratt, Jr. will represent the company in similar capacity in the southern states.

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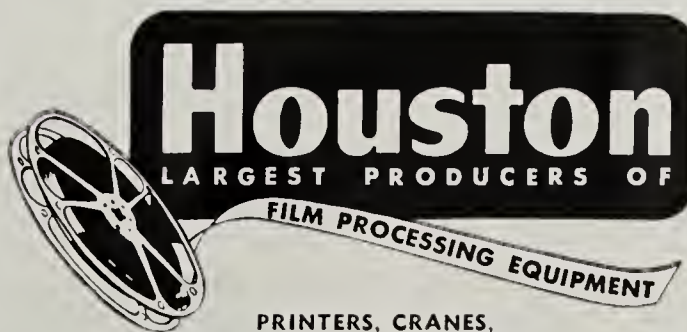
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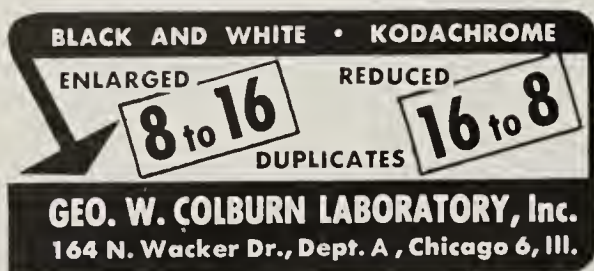
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## Religious Film Division Of United World

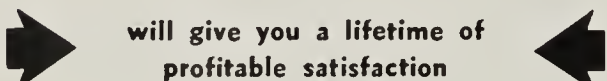
United World Films has established a special religious films division, which will be under general direction of vice president Edward T. Dickinson, Jr. William Sherman Greene, Jr. has been named manager of the division and will supervise distribution to Protestant church groups; while Leo B. Guelpa, Jr. contacts the Catholic groups.



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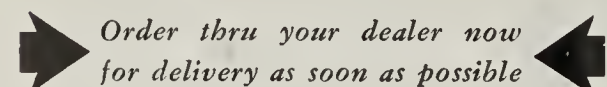
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## NEW SEMI-PRO 16 MM. CAMERA BY BELL & HOWELL

FROM Bell & Howell's Lincolnwood Laboratories comes the announcement of the Filmo Specialist, new 16 mm. B&H semi-professional camera designed for the advanced worker in 16 mm. film.

The Specialist, says B&H, embodies a host of cinematic features that will be of great interest to all 16 mm. photographers who are operating either professionally or at a technical level in advance of the average home movie maker.

Features of the new camera are:

Professional shift-over focusing, whereby a brilliant, full-frame image on ground glass permits rapid and accurate focus through the lens while it is in photographing position.

Four-lens turret, on which lenses are widely spaced to eliminate optical interference even with longer lenses. Lens equipment includes 1-inch f:1.9 Lumax, 17 mm. f:2.7 Ansix, 2-inch f:3.5 Telate, and 3-inch f:4 Telate, all Filmcoated lenses.

Viewfinder parallax adjustment, said to permit easy and rapid elimination of parallax error. Once the finder is adjusted, any action can be accurately followed through the viewfinder.

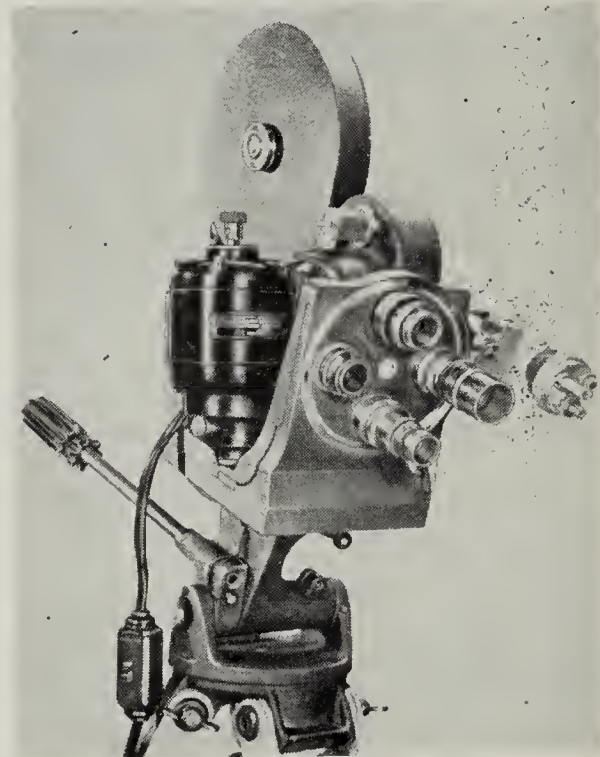
Positive viewfinders, mounted on a rotating turret, providing brilliant upright images.

Light-baffled shutter prevents light-leak, keeps first frame from fogging.

Selective, 3-way power. Filmo Specialist is driven electrically, by spring motor, or by hand-crank, as the operator chooses. Also, the purchaser has a choice of four electric motors, including a synchronous, sound-speed, electric drive.

400-feet film capacity. The two 400-feet external film magazines accompanying each camera give the Specialist an exceptionally wide film capacity range.

Bell & Howell states further that the new camera will include seven operating speeds, ranging from 8 to 64 frames per second, each governor-controlled and ac-



curate to within 2%; a Veeder footage counter reading up to 999 feet; complete film protection through special B&H design of registration mechanism, shuttle-tooth movement, and shock-absorbing sprockets; rewind knob for backwinding the film within the camera; automatic relative exposure indicator for determining lens apertures at other than normal camera speed; and continuous operation lock.

Available for the Specialist is a B&H semi-professional tripod with case, and a carrying case for the camera and its accessories.

### Ampro Adds Plant

To accommodate the expansion program of Ampro Corporation, company has acquired a five story building in Chicago to provide 100,000 square feet of additional plant space for the manufacture of Ampro's products, including 8 and 16 mm. silent and sound projectors, and slide and strip-film models.

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Theatre Television

(Continued from Page 14)

tive. Paramount has been active for some time.

Here in Hollywood when theatre television is mentioned, most people immediately think of the producing companies. It is my guess that the producing companies and their distributors will be the last to be affected. The revenues available from the production and distribution of television films is not comparable with the return from the theatre. Further, economically there seems to be little likelihood that television distribution of the present product can replace film, at least for a long time.

It is interesting to note that the above named companies have theatre circuits and that most of the interest has developed in New York. It is unfortunate that the theatres of the country are not as well organized and coordinated technically as the producers. It was in recognition of this weakness that the Society held a Theatre Engineering Conference in conjunction with our last convention.

We have discussed many phases of both television broadcasting and theatre television. In the field of television broad-

casting it is quite apparent that sports are most popular, followed by news, shorts and drama. Commercials are acceptable. These programs are being presented instantaneously, from pre-prepared films and transcriptions and are well on their way.

In the theatre we have no television experience but we have a very good barometer—the box office. During the playing time of the recent World Series Baseball Games the box office was reported to be "off" from 40 to 50% in the New York, Boston, Philadelphia and Washington areas. It is also estimated that one-half a million people saw these games over television. Most of these people saw these games in bars or other public places. I don't know whether the motion picture theatres are going to offer these events to the public or not. There is one thing that I would be quite sure of and that is if the theatres don't, some progressive managers of fight arenas and other auditoriums will.

Some of the statements which I have made would make it seem as though television broadcasting and theatre television were highly competitive. It is my feeling that these two arts should develop side by side in collaboration and that the work of each should contribute to the betterment

of the other. It will be a long time before the public can be supplied with or can afford to buy television receiving sets in numbers compared to radio. During the interim the theatres should determine the extent and manner of their participation. The motion picture industry has been aided by radio which has helped to build stars, personalities and interest. The same thing should hold true in regard to television. Time and experience will tell how the best interest of the public can be served.


If we as individuals are to be a part of future television activity, it is up to us to analyze the development and evolution of television on a broad basis and to see and accept the changes which are bound to take place as television takes its place as one of the great tools of entertainment presentation.

U. S. Camera Annual


The 1948 edition of U. S. Camera Annual will be available at photo supply dealers and stores within the next few weeks. In two sections, first presents the outstanding news pictures of the year, while second portion is devoted to outstanding stills by expert professional and amateur photographers.

FONDA BASIC MODELS											
Speeds and developer times given are normal standards. Variations may be obtained by adjusting variable speed drive or altering developer loop lengths by the Fonda built-in adjustment mechanism.											
FILM TYPE	FILM SIZE	MODEL NO.	APPROXIMATE OPERATING SPEEDS			APPROXIMATE MACHINE SIZES Includes Feed Elev. & Work Tables Both Ends					
			Positive 4 Min. Dev.	Negative 9 Min. Dev.	Reversal 6 Min. 1st. Dev. 6 Min. 2nd Dev.	WET END			DRY END		
						Length	Width	Reqd. Ceiling	Length	Width	Height
Negative	16 mm.	F-1012 F-1021		29 fpm 58		6½ ft. 9	3 ft. 3	12 ft. 12	5 ft. 7	3 ft. 3	7 ft. 7
	16/35 mm.	F-3008 F-3018		17 34		6½ 9	3 3	12 12	5 7	3 3	7 7
Positive and Negative	16 mm.	F-1011 F-1014	65 fpm 131	29 58		9 13	3 3	12 12	7 9	3 3	7 7
	16/35 mm.	F-3017 F-3002	39 78	17 34		9 13	3 3	12 12	7 9	3 3	7 7
Reversal	16 mm.	F-1008	44	29	44 fpm	13	3	12	5	3	7
	16/35 mm.	F-3016	26	17	26	13	3	12	5	3	7
			Microfilm 3½ Min. Dev.		Anso Color 12 Min. 1st. Dev. 15 Min. Color Dev.						
Microfilm	16 mm.	F-1020	75 fpm			9½	3	12	7	3	7
	16/35 mm.	F-3015	44			9½	3	12	7	3	7
Anso Color	16 mm.	F-1009 F-1002			43 fpm 87	16 26	3 3	12 12	5 7	3 3	7 7
	16/35 mm.	F-3013 F-3004			26 52	16 26	3 3	12 12	5 7	3 3	7 7

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## "Forever Amber"

(Continued from Page 9)

tings are very aptly characterized by selective lighting that maintains a generally somber key, but points up significant details harshly. In the later episodes, when Amber has become a full-fledged courtesan luxuriating in the midst of her ill-gotten gains, the style of photography takes on a smooth, glossy quality that is definitely in key with her exalted status.

Some of the most effective photography in the entire film is devoted to the plague sequences, in which the horror and desolation of the situation is forcefully suggested through the use of heavy shadows, low-key lighting, and grey daylight exteriors. Here again, bright color was held to a very minimum, with the general monotone effect disturbed only by the startling red crosses appearing on the doors of stricken houses.

Perhaps the most spectacular sequence is that portraying the London fire. Shamroy uses flames as a fiery frame for his compositions, and the resultant effect is frighteningly subjective in that the audience is made to feel that it is actually in the midst of the holocaust. An overall red glow, low camera angles, and the skillful use of the wide-angle lens does much to point up this effect and add to the drama of the situation.

The duel sequence, with its static grey fog and muted color, is a fine example of photographic understatement, while yet establishing an atmosphere of impending doom that is exactly in key with the emotional pattern of the action. Considered the most difficult bit of shooting in the picture, this sequence required an entire sound stage and the application of several original filming devices.

"We all know that there is a minimum of color existing in a foggy morning before sunrise," Shamroy observes, "but in order to film such an effect on a sound stage in Technicolor, light was needed, and it had to be sufficiently actinic to register on the film. The aim was to create a monotone effect through the absence of all color from the scenes."

No stage on the lot was large enough to create anything approximating an ac-

tual overcast "sky," so the top of the stage above the set was faced with a grey backing against which was blown a chemical fog created by releasing two acids through jets under air pressure. In order to keep these vapors from settling to the floor of the stage, the temperature had to be maintained near the freezing point during actual shooting. In order to further accentuate the impression of dank coldness, the set was lit exclusively with raw arc light, and a fog filter was used over the camera lens.

In sharp contrast to the studied drabness of the duel sequence is the colorful elegance of the scenes showing the court of Charles II. Stately Whitehall Palace, with its richly carved wooden interiors, makes an elegant frame for the brilliant costumes of the courtiers, and the sparkling high-key lighting does much to convey the glamorous atmosphere of the decadent court.

### Shamroy the Man

Leon Shamroy, A.S.C., the power-behind-the-lens on "Forever Amber," is something of a personal paradox. A genial extrovert with the uninhibited vocabulary of a Brooklyn truck driver, he is, at the same time, one of Hollywood's most accomplished and most sensitive camera artists—a past master at the craft of blending color with celluloid.

His most striking quality, aside from his acknowledged mastery of the lens, is his sincere devotion to the cinematic medium as an *art form*. His entire background and approach to cinematography is based on a careful study of the painting techniques of the Old and Modern Masters, and his skill as a *raconteur* of ribald stories is excelled only by his ability to discuss the more subtle principles of classic art applied to the motion picture.

"Whether you're using an 8 mm. home-movie camera or a Technicolor camera on a sound stage," he points out, "you can learn a lot by studying the great painters. Like the artists, you can approach a picture in three ways. *Breughel*, for instance, painted life as he saw it. *Goya* added emotion. *Picasso* put down on canvas what was in his mind. In shooting movies today we use either one or all three of these approaches."

He goes on to say that the essence of good technique, both in painting and in photography, is *simplicity*—a quality that often becomes obscured by the wealth of complicated techniques and gadgets available to the modern cinematographer: "The Old Masters knew all there is to

know about lighting, perspective and color. They were great in their simplicity. Too many cinematographers today, professional as well as amateur, get too complicated. They become too involved in backlighting, high-lighting and other techniques that camera people revel in."

Shamroy practices what he preaches. His library is stacked with prints of masterpieces of the world's greatest painters, from the Grecians on down to the most modern surrealists. He visits every art show within a thousand miles of Hollywood, and goes about lighting a scene with the same thought and care Rembrandt or El Greco must have used in approaching a canvas.

His subtlety in using warm and cold tones of light to enhance the effect of Technicolor compositions has led to the development of a style known as "painting with light." He employs his lighting values exactly as a painter might use subtle tones of pigment to suffuse selected areas of a canvas with warmth or coolness. This style is a complete departure from the earlier concept of Technicolor photography in which great amounts of *white* light were used to flood the set—color contrast within the scene resulting solely from the design of sets and costumes.

Unlike some cinematographers who try to cram as much color into the frame as possible, Shamroy is a firm believer in the restrained use of the more brilliant hues. "The Masters, you'll notice, really knew how to use color," he says, "Hollywood only now is catching up with them. The movies have been blamed time and time again (and rightfully so) for using hard and cold colors that make the scenes look like postcards. The Old Masters never did that. Their colors were muted, but they added greatly to the dramatic and emotional effect of the painting."

His approach to color lighting is not merely the mechanical approach of the technician, but the *emotional* approach of the artist. He feels that each sequence has its own emotional atmosphere and that it is the task of the cinematographer to match his lighting to that emotion. Thus it is that the photography in "Forever Amber" varies from somber low-key to vivacious brilliance according to the constantly changing emotional character of the action.

Shamroy, a pioneer in the field of color cinematography, has thrice won Academy awards for his Technicolor photography of "The Black Swan" (1942), "Wilson" (1944), and "Leave Her to Heaven" (1945). For him to win another award this year for his lensing of "Amber" could hardly be more than an anti-climax after that brilliant record—but it is a certainty that his name will stand high up on the list of nominees when final judging for the awards rolls around.

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## Color Is Different

(Continued from Page 11)

bluish effect one can readily get and just as readily detest.

When using kick lights, such as Seniors—an incandescent light source with the blue lens element adapted for color—I always add a Y-1 filter whenever the lamp is more than a 45 degree angle from the object photographed. The light has a tendency to look blue and Technicolor will certainly photograph a blue, so believe me when I say, remember the good old Y-1's.

Whenever doing light effects, such as an actor walking through a shadow, make it a real good black shadow or again he's going to look like "The Last of the Mohicans," red face and all. Also one had better have something lighted normal behind him, the wall or a low break, as somewhere in the shot you must have something normal to print, too.

Black really goes black in color. All the arc light in the world won't make it become any lighter, but next time try putting an amber 56 filter on the arc that is lighting this dark object. Or again and better yet, use a raw unfiltered incandescent lamp on it. This is especially good on dark furniture—or tree trunks, etc.

On a Technicolor picture one has a tendency to be very close to his light meter—this is proper but still don't become too attached to what it tells you. If after measuring a key light to the proper amount of light, the person's face looks hot, why flood the light out until it looks better. The same holds if it looks too low in key, bring it up to where it looks right to your eye. You are still photographing what you see and you must use the meter as a tool and not as an automatic lighting method.

Split focus shots constitute a problem more difficult than in black and white. In the first place, all color systems lack definition; no matter what their sponsors claim to the contrary. I found that the best way to eliminate the trouble is to eliminate this type of shot. Naturally directors become very obnoxious after talking them out of shots all day, especially if they've never made a color picture before. If this is true, wait until you hear them moan about the photography when they happen to view rushes printed on the red, green, or blue side some night. They still believe that the cameraman slipped up somewhere down the line.

Whenever possible it is a good idea to try to suggest the elimination of "dupe." After a dissolve the "dupe" in Technicolor is held for the entire shot, not just for the length of the dissolve as in black and white. If your director can arrange to cut to another angle as soon as possible

after the dissolve you will have a much better looking photographic job.

The greater field offered by color photography for the cameraman to express his imagination makes it much better for him to work with. There is an unending field of new effects that are not possible in black-and-white. The pleasure of looking at a good day's rushes is something more satisfactory than any black and white. The work done by the Directors of Photography as pioneers in Technicolor is an invaluable help for all of us just venturing into color. Much can be learned by careful study of work done by our A.S.C. members who have blazed a trail of achievement and shown the way for other men in their practical and artistic approach to modern color photography.

The cooperation required between the art director, costume designer and cameraman is more necessary than on any other type of production. Naturally the Director of Photography should have the final say on all technical problems arising which affects the photography. He is the one who presents the picture on the screen to the audience. He is the one who is also responsible for the time consumed on production for technical reasons, and when the film is viewed in the studio projection room the entire production falls upon his shoulders. The authority and decisions pertaining to anything in color must definitely be placed in his hands and he should be given a free hand to place the desired effect on the screen through his artistry and imagination.

In color, we, as Directors of Photography, have a medium of expression that hasn't as yet been touched—we have much before us. And again, Color is Different.

## FOR SALE

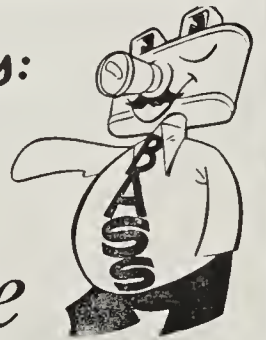
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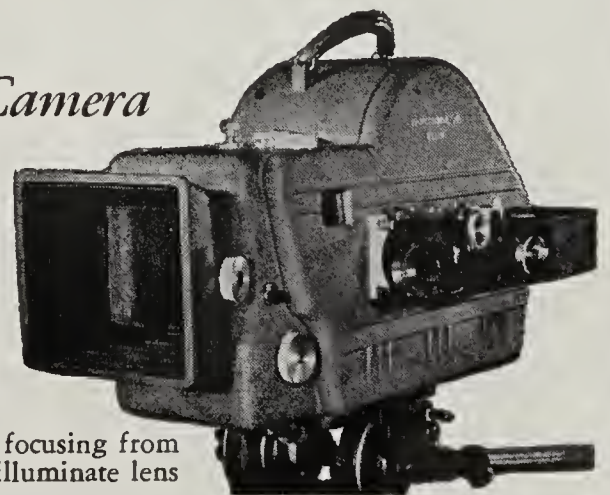
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Blimp takes synchronous motor drive which couples to camera. It has a leather carrying handle mounted at the top. A dovetail bracket is provided to mount an erect image viewfinder for following action.

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# Current Assignments of A.S.C. Members

**M**EMBERS of the American Society of Cinematographers were engaged as Directors of Photography in the Hollywood studios during December as follows:

## Allied Artists

- Karl Struss, "The Tenderfoot," with Eddie Albert, Gale Storm, Barton McLane, Binnie Barnes, James Gleason.

## Columbia

- Ernest Laszlo, "Lulu Belle" (Benedict Bogeaus Prod.), with Dorothy Lamour, George Montgomery, Glenda Farrell, Otto Kruger, Greg McClure.
- William Snyder, "The Loves of Carmen" (Technicolor), with Rita Hayworth, Glenn Ford, Rod Randall, Victor Jory.
- Phil Tannura, "Trapped by Boston Blackie," with Chester Morris, Richard Lane, Edward Norris, George E. Stone, Frank Sully.
- Allen Siegler, "Port Said," with William Bishop, Gloria Henry.
- Burnett Guffey, "The Gallant Blade," with Larry Parks, Marguerite Chapman, Victor Jory, George Macready.
- Vincent Farrar, "Best Man Wins," with Edgar Buchanan, Anna Lee.
- Henry Freulich, "Trail to Laredo," with Charles Starrett, Smiley Burnette.

## Eagle-Lion

- John Boyle, "Mickey" (Cinecolor),

with Irene Hervey, Bill Goodwin, Lois Butler, Hatty McDaniel, Skip Homeier.

- John Alton, "Corkscrew Alley," with Dennis O'Keefe, Claire Trevor, Marsha Hunt.

## Independent

- Benjamin Kline, "Arthur Takes Over" (Sol Wurtzel Prod.), with Lois Collier, Jerome Cowan, Skip Homeier.
- Walter Streng, "The Unwritten Law" (Falcon Prods.), with John Calvert, Rochelle Hudson, Lyle Talbot, Tom Kennedy, Roscoe Karns.
- George Robinson, "13 Lead Soldiers" (Reliance Prod.), with Tom Conway, Helen Westcott, Maria Palmer.

## Metro-Goldwyn-Mayer

- Charles Schoenbaum, "Master of Lassie" (Technicolor), with Edmund Gwenn, Janet Leigh, Tom Drake, Donald Crisp, Reginald Owen, Rhys Williams, Lassie.
- George Folsey, "State of the Union" (Liberty Films), with Spencer Tracy, Katharine Hepburn, Van Johnson, Angela Lansbury, Adolphe Menjou.
- Robert Surtees, "The Big City," with Margaret O'Brien, George Murphy, Robert Preston, Danny Thomas, Karin Booth, Betty Garrett, Lotte Lehman.
- Harry Stradling, "Easter Parade," with Fred Astaire, Judy Garland, Peter Lawford, Ann Miller.

## Monogram

- Mack Stengler, "Death on the Downbeat," with Freddie Stewart, June Preisser, Noel Neill, Warren Mills.

## Paramount

- Leo Tover, "Sealed Verdict," with Ray Milland, Florence Marly, John Ridgely, Margaret Fields, Broderick Crawford.
- Lionel Lindon, "Sainted Sisters," with Veronica Lake, Joan Caulfield, Barry Fitzgerald, George Reeves, William Demarest, Beulah Bondi.
- Ray Rennahan, "A Connecticut Yankee" (Technicolor), with Bing Crosby, Rhonda Fleming, Sir Cedric Hardwicke, Vurvyn Vye, Virginia Field, William Bendix, Joe Vitale, Henry Wilcoxon, Richard Webb.
- Daniel Fapp, "Hazard," with Paulette Goddard, Macdonald Carey, Stanley Clements.
- Charles Lang, Jr., "Foreign Affair," with Jean Arthur, Marlene Dietrich, John Lund, Millard Mitchell.

## RKO

- Joe Valentine, "Joan" (Sierra Pictures) (Technicolor), with Ingrid Bergman, Jose Ferrer, John Emery, George Coulouris, Richard Ney, Hurd Hatfield, Robert Barrat, Selena Royle, Gene Lockhart, Roman Bohnen, Ward Bond, Leif Erikson, Richard Derr.
- Joe Walker, "The Velvet Touch" (Independent Artists), with Rosalind Russell, Leo Genn, Claire Trevor, Sydney

Greenstreet, Leon Ames, Frank McHugh, Walter Kingsford, Dan Tobin, Esther Howard.

## Selznick

- James Wong Howe, "Mr. Blanding Builds His Dream House," with Cary Grant, Myrna Loy, Melvyn Douglas, Dan Tobin, Louise Beavers, Cliff Clark.

## Twentieth Century-Fox

- Joe La Shelle, "Deep Water," with Dana Andrews, Joan Peters, Cesar Romero, Anne Revere, Dean Stockwell, Ed Begley, Mae Marsh.
- Leon Shamroy, "This Is the Moment" (Technicolor), with Betty Grable, Douglas Fairbanks, Jr., Cesar Romero, Walter Abel, Reginald Gardiner, Harry Davenport, Virginia Campbell, Whit Bissell.
- Norbert Brodine, "Sitting Pretty," with Robert Young, Maureen O'Hara, Clifton Webb, Richard Haydn, Larry Olsen, Anthony Sydes.
- Arthur Miller, "Walls of Jericho," with Linda Darnell, Cornel Wilde, Anne Baxter, Kirk Douglas, Ann Dvorak, Marjorie Rambeau, Colleen Townsend, Griff Barnett, Barton MacLane, William Tracy.
- Charles Clarke, "The Iron Curtain," with Dana Andrews, Gene Tierney, June Havoc, Lee J. Cobb, Nicholas Joy, Frederic Tozere, Dennis Hoey.

## Universal-International

- Russell Metty, "All My Sons," with Edward G. Robinson, Burt Lancaster, Mady Christians, Howard Duff, Louisa Horton, Arlene Francis, Frank Conroy, Lloyd Gough, Henry Morgan, Elizabeth Fraser.
- Milton Krasner, "Up in Central Park," with Deanna Durbin, Dick Haymes, Vincent Price, Albert Sharpe, Thurston Hall, Tom Powers, Hobart Cavanaugh, Moroni Alsen, Nelle Fisher, Bunny Waters, Nina Lunn, Patricia Alphin.
- Irving Glassberg, "Casbah" (Marston Prod.), with Yvonne De Carlo, Tony Martin, Marta Toren, Peter Lorre, Thomas Gomez, Hugo Haas, Katherine Dunham.
- Hal Mohr, "Another Part of the Forest," with Fredric March, Ann Blyth, Dan Duryea, Edmund O'Brien, Florence Eldridge, John Dall, Dona Drake, Betsy Blair, Fritz Leiber, Wilton Graff.
- Maury Gertsman, "Are You With It?" with Donald O'Connor, Olga San Juan, Martha Stewart, Lew Parker, Pate Dane, George O'Hanlon, Ransom Sherman, Eddie Parks, Louis Da Pron.
- William Mellor, "Man-Eater of Kumaon" (Monty Shaff Prod.), with Sabu, Wendell Corey, Joanne Page.

## Warners

- Ernest Haller, "Winter Meeting," with Bette Davis, James Davis, Janis Paige, John Hoyt, Florence Bates, Walter Baldwin.
- Woody Bredell, "Adventures of Don Juan" (Technicolor), with Errol Flynn, Viveca Lindfors, Robert Douglas, Romney Brent, Alan Hale, Jerry Austin, Robert Warwick, Joy Page, Helen Westcott.





## 25 YEARS AGO

### With A.S.C. and Members

• From London, Herford Tynes Cowl- ing, A.S.C., described a cinematographic exhibition at South Kensington Museum which displayed: Sir John Herschell's sci- entific toy, the Thaumatrope, invented in 1827; the original lantern slides of George IV's coronation procession; specimens of the wax figures used in the Chinese shad- ow shows centuries before the birth of Christ; a book published in Latin in Rome in 1646, wherein Anathasius Kircher de- scribes the invention of the magic lan- tern in 1640; and Edison's original pro- jector, which was first revealed to the public at the Chicago World's Fair in 1893. The exhibition was the property of Will Day, manufacturer of cinema appli- ances, and reportedly cost \$50,000 to col- lect.

• John Seitz, A.S.C., was at Miami, Florida, filming "The Passion Vine" for Rex Ingram.

• Gilbert Warrenton, A.S.C., had start- ed on his second Alice Brady starrer for Paramount in New York, "Anna As- cends."

• John Arnold, A.S.C., completed pho- tography on total of 47 productions star- ring Viola Dana at Metro—every picture she appeared in for that company.

• Karl Brown, A.S.C., was photograph- ing "The Covered Wagon," which James Cruze directed for Paramount.

• Roy Overbaugh, A.S.C., was in New York photographing the Richard Barthel- mess starrer, "Fury."

• Off for Europe was Ira Morgan, A.S.C., to photograph Lionel Barrymore, Alma Rubens, William Collier, Jr., in Cosmopolitan's "The Enemies of Women."

• Irving Thalberg, then director-gen- eral of Universal City, addressed an open meeting of the ASC, and emphasized the importance of superior photography on production.

• Sol Polito, A.S.C., launched filming of "Mighty Lak a Rose" in New York City.

• Experiences in filming a whale hunt on the Pacific for Irvin Willat's "All the Brothers Were Valiant," were described in an article by Robert Kurrle, A.S.C.

• John Dored, A.S.C., stationed at Riga, Latvia, reported on film conditions in Russia. A million Soviet rubles were re- quired for a theatre admission, but in American money the amount represented about 10 cents. There were about 40 cine- mas in Moscow; 30 in Petrograd; and not more than 200 in the provinces. Films shown were old and virtually worn out, with no new importations due to money inflation.

• Walter Griffin, A.S.C., was shooting a David Hartford feature in New Bruns- wick, Canada, and wrote that St. John was "the coldest city in the world."

• Warners feature, "Brass," was being photographed by George Benoit, A.S.C.

• The first publicized million dollar production, "Merry-Go-Round," was be- ing photographed at Universal by Phil Whitman, A.S.C.

• George Barnes, A.S.C., was winding up photography on "Peg O' My Heart," Laurette Taylor starrer for Metro.

• Charles Rosher, A.S.C., was busy pre- paring for the start of Mary Pickford's starrer, "Dorothy Vernon of Haddon Hall."

• Jackson Rose, A.S.C., was shooting a comedy travelogue in Hawaii.

• Finishing "The Beautiful and Damned" for Warners, Ed Du Par, A.S.C., was assigned to handle photography for "The Little Church Around the Corner" at the same studio, with Homer Scott, A.S.C.

• Edward Blackburn, connected with the Rothacker office in New York, was to join the executive staff of Rothacker- Aller laboratories in Hollywood.

• Ernest Palmer, A.S.C., returned from an extended trip to England, and re- joined the John Stahl organization as chief photographer.

• Reports from London detailed the construction of the newly-built Newman- Sinclair Number Three professional 35 mm. camera; with weight of camera and tripod of 30 pounds; and compact cam- era body of 14 x 6 x 8 inches.

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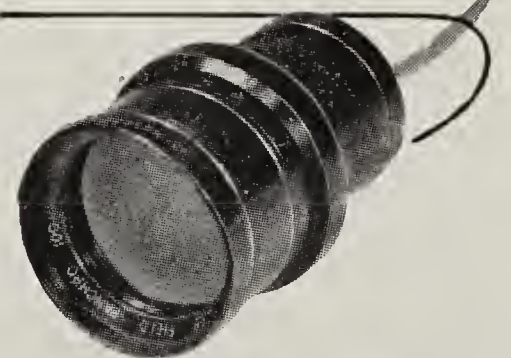
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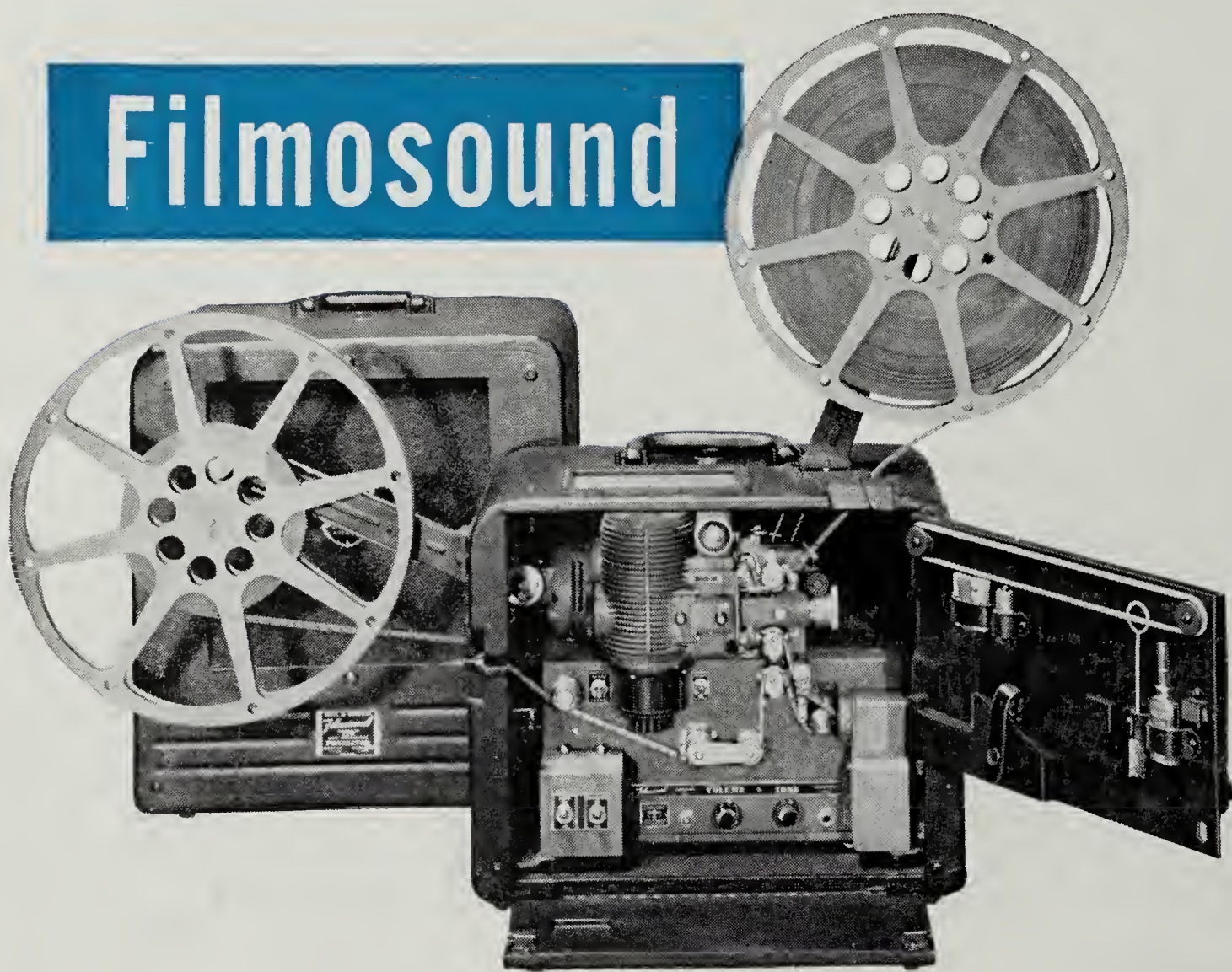




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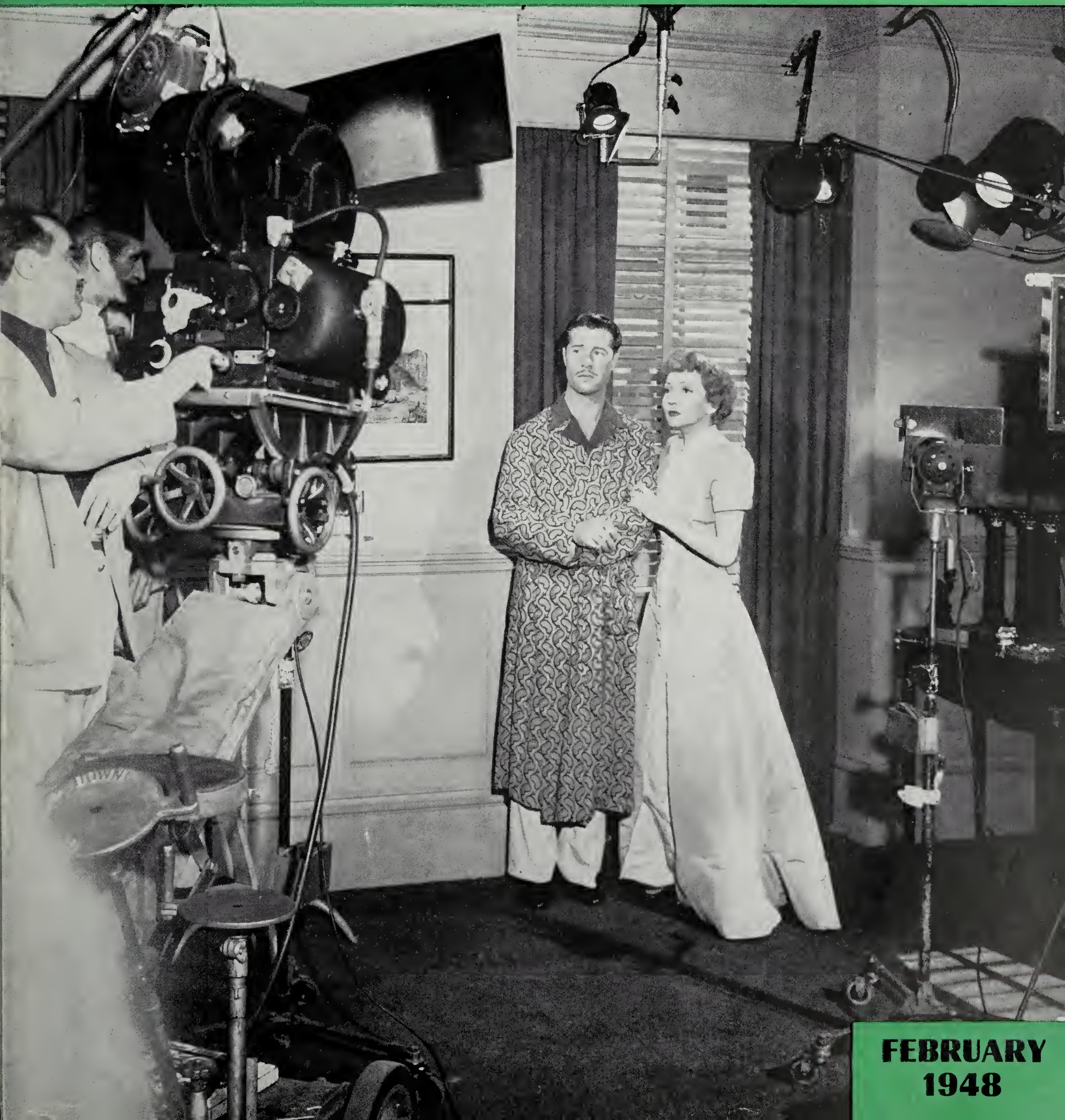


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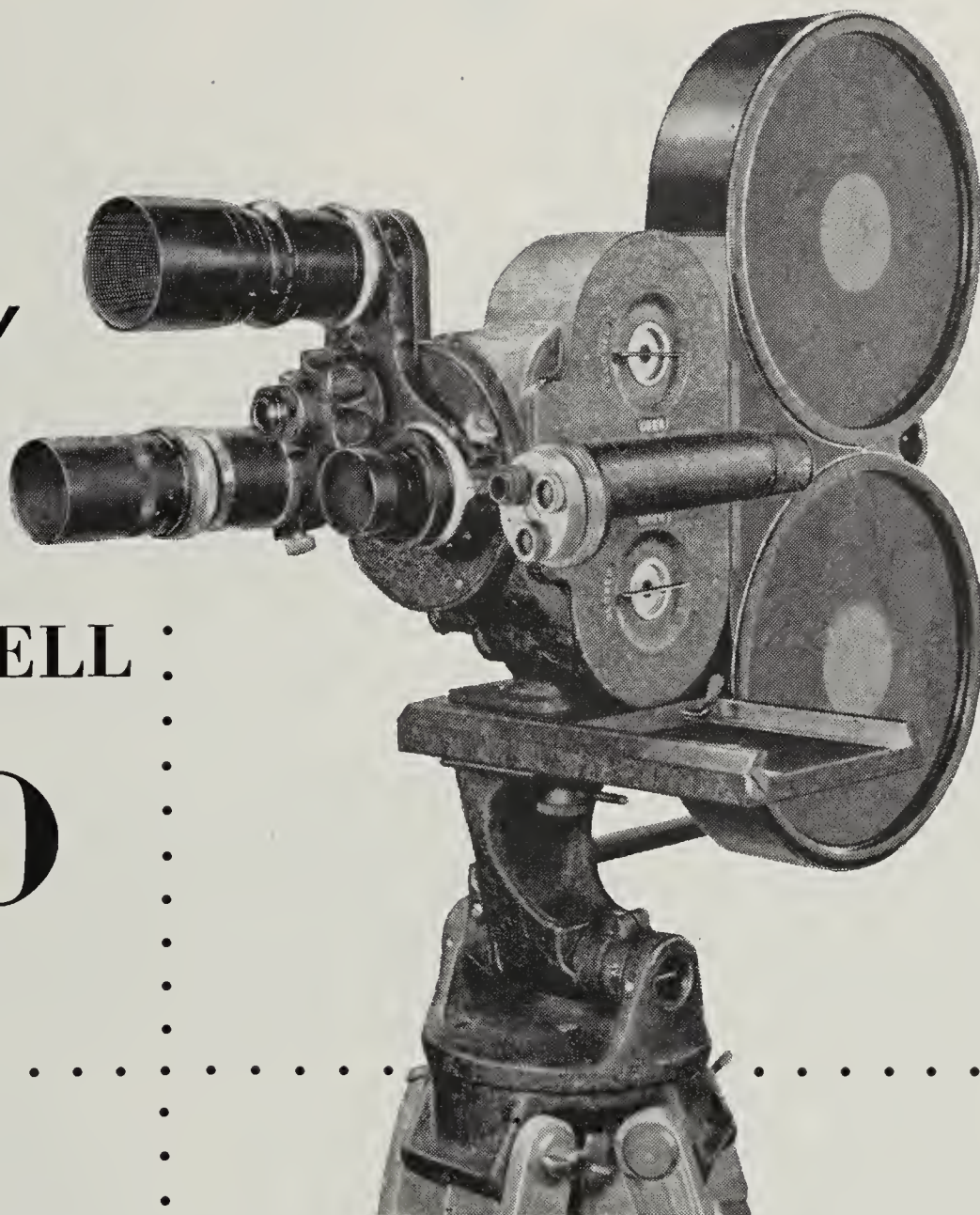
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THE MOTION PICTURE CAMERA MAGAZINE

VOL. 29

FEBRUARY, 1948

NO. 2

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ON THE FRONT COVER—Director of Photography Joseph Valentine, A.S.C., (extreme left behind camera) lines up a shot of Don Ameche and Claudette Colbert for the Mary Pickford-Triangle production of "Sleep My Love." See article on page 46. Still by Milton Gold.

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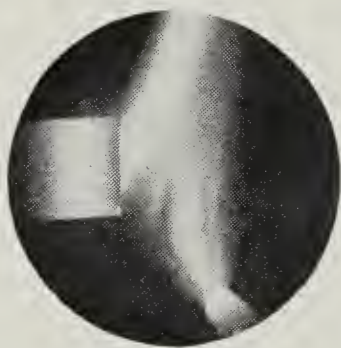
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New York, Pittsburgh, San Francisco



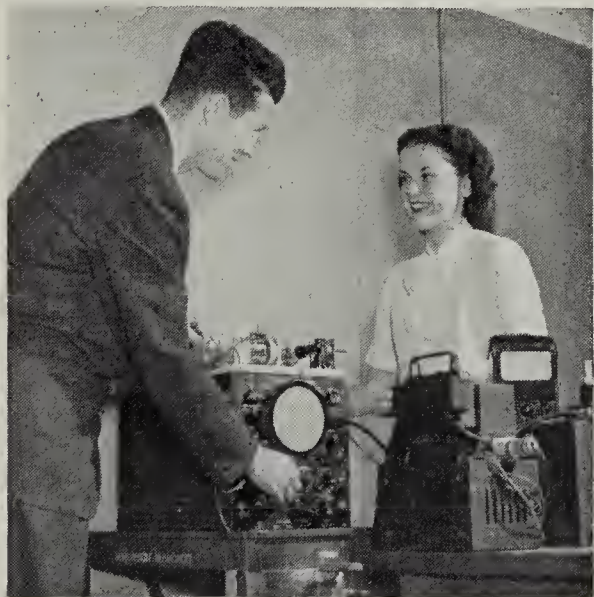


**P**HOTOGRAPHY has come of age. Within the past few years it has grown up until today it is doing a man's work,—in fact many men's work. Although it still provides joy and relaxation to many millions throughout the world, its major service today is that of a useful tool to record, measure, and study the business of the world. New cameras, improved films, better methods of processing, copying, storing, and examining photorecords were announced during the year.

A new era in communication promised to be opened up by devices using photography in various ways in connection with the facsimile transmission of text matter and photographs. One system known as Ultrafax handled each transmitted page separately as a single frame of a television image. At the receiving end, the images are photographed and can be developed rapidly and enlarged onto a band of paper, which in turn can be developed quickly. This method was designed and built by the Radio Corporation of America and was reported to be capable of transmitting one million words a minute. Only one-fifth as many words are included in the average city newspaper which takes several hours to prepare and print.

It is obvious from this development and others that a need exists for equipment which will permit rapid processing of photorecords. In one type of machine designed to meet this need, records of 16-mm film could be processed completely in 35 seconds. Very small volumes of hot solutions (about 125°F.) are used and the film passes under the open base of tiny glass tanks into which the solution flows continuously. Motion pictures taken during an airplane flight from Philadelphia to Atlantic City and return were processed enroute by this equipment and televised within a few minutes after the plane landed. This equipment was constructed by the Kodak Research Laboratories.

Another device for rapid processing was incorporated in a camera which pho-



Photographic "Memory" camera for use with electronic calculator.  
Photo: Eastman Kodak.

tographs electric power surges up to 3,000,000 volts as they appear on an oscillograph screen. Within 30 seconds the images are developed and a 10-times enlargement is projected on a ground glass screen mounted on the camera. It was possible with this device, which was built by General Electric Company, to check performance while the apparatus was being tested.

In connection with many types of equipment using cathode ray tubes, photography provides the best means of making a permanent record of the transient images on the tube. In November, a special "memory" camera was announced for photographing the rapidly changing pattern on the tube of an electronic calculating machine (Fig. 1). The rectangular spot pattern, representing numbers as high as 12 digits, was recorded on 35-mm film; about 3 million digits to each 100-feet of film. After rapid processing, the film is projected onto photoelectric tubes for further use by the calculator or it may be projected for direct examination (N. Y. Times 97: Sect. 4, p. 9, November 9, 1947).

Up-to-the-minute weather reports over the Pacific were provided the U. S. Navy by means of a radio-photo network which used facsimile machines made by the Times Facsimile Corporation. News photos were sent daily by the Byrd Antarctic Expedition to Washington, a distance of over 10,000 miles, a new record for transmission without relays.

The most comprehensive aerial mapping survey ever undertaken in the Antarctic was completed during the year. Approximately 1,805,000 square miles representing the entire coastline of Antarctica was photographed. Of this total area, about 100,000 square miles of unknown territory, was mapped in November in less than 30 hours with two planes by the Ronne Antarctic Expedition, led by Commander F. Ronne, USNR. The major part of the survey was made in January and February by the U. S. Navy expedition led by Admiral R. E. Byrd, USN-Ret. The

# Photographic Highlights Of 1947

By **GLENNE E. MATTHEWS**

(Technical Editor, Kodak Research Laboratories, Rochester, New York)

(From the 1948 Colliers National Year Book, P. F. Collier and Son Corp., New York)

expedition was known officially as Operation Highjump. Both ordinary and color photographs were made and approximately 70,000 aerial photographs, 7,000 ground photographs, and 300,000 feet of motion picture film were exposed (Fig. 2). With the aid of the aerial pictures, permanent records were made of a great many new mountains, glaciers, and two "oases" of unfrozen lakes containing growing plant life (U. S. Camera 10: 18, July 1947; also Nat. Geog. Mag. 92: 429, October 1947).

On May 20, 1947, many valuable photo-records were made of the total eclipse of the sun at Bocaiuva, Brazil by members of an expedition sponsored by the U. S. Army Air Forces and the National Geographic Society. (Nat. Geog. Mag. 92: 285, September 1947).

Two mountain climbing expeditions were documented with photography in 1947. The first one known as Operation White Tower had as its objective the summit of Mt. McKinley, 20,270 feet, highest peak in the North American continent. This expedition was sponsored jointly by the New England Museum of Natural History and the RKO-Radio Pictures. It was a very carefully planned scientific exploration, fully documented by still and motion picture photography in black-in-white and in color (Fig. 3). The



Motion picture camera in use at Little America, Operation Highjump.

Photo: Official U. S. Navy.



summit was reached on June 7 by several members of the party including the leader of the climb, Bradford Washburn, and his wife Barbara, the latter being the first woman ever to have completed the ascent. Supplies were flown in during certain phases of the climb by the U. S. Army Air Force. The other expedition took place between June and October in the Gangotri Massif, a cluster of peaks in the



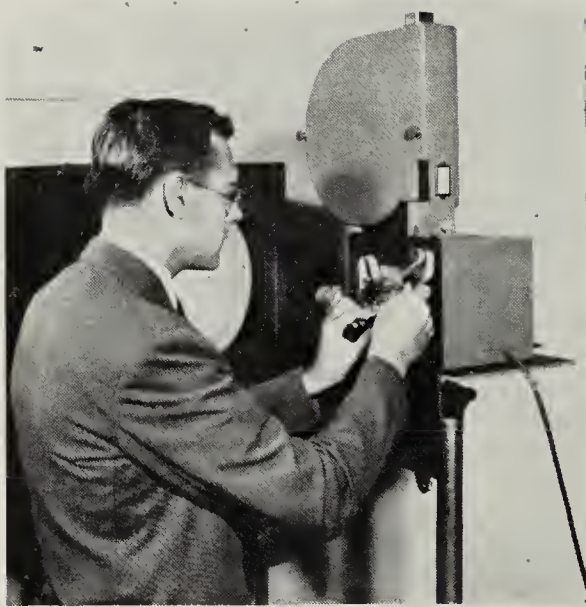
Electrically driven motion picture camera records climb up Mt. McKinley (20,270 feet).

Photo: New England Museum of Natural History and RKO.

Himalayan chain 210 miles northeast of New Delhi, India. Six peaks never before explored were climbed by a small expedition of four men and one woman including its leader Andre Roch, the Swiss ski champion. In the group of peaks climbed by the party were Kedarnath (20,820 feet), White Dome (20,946 feet) and Satopanth (21,225 feet). The mapping survey was under the direction of the Swiss Foundation for Alpine Research (Life 23: 145, December 15, 1947).

**Television.** About 122,000 television receivers were estimated to be in use in the United States by the end of the year. An increasing use of motion pictures for television programs was predicted as it was realized that many sections of the country for many years would not have available inter-city connections because of the great cost of installing coaxial cable or radio-relay stations. Two events of world-wide interest that were recorded on film and televised from the film were the total eclipse of the sun at Bocaiuva, Brazil on May 20, and the wedding of Princess Elizabeth and Prince Philip on November 20 in London. Both films were flown to New York; the eclipse picture was televised 60 hours after the event and the wedding within 29 hours.

Another rapidly expanding use of film was for direct photography of the tele-



TV recording camera for photography of television monitor tube.

Photo: Eastman Kodak.

vised image from a kinescope while the television show was in production for the air. Records of this type would be useful not only for television programs but also for public relations, advertising, and for legal purposes. For such records rapid processing machines would frequently be needed so that the film could be projected or televised (Communications 27: 7, September 1947; also Radio News 38: 39, November 1947). At the October meeting of the Society of Motion Picture Engineers in New York a camera using 16-mm film was described which had been designed for the photography of television images (Fig. 4).

Research programs on large screen theatre television were announced by Warner Brothers Pictures, Inc., and Twentieth Century-Fox Films Corporation; both companies will work closely with the Radio Corporation of America.

**Military Research Aided by Photography.** Photographic studies were continued by the Army and the Navy on the performance of rockets and guided missiles. On December 27, 1946, the first night flight of a V-2 rocket at the Proving Ground, White Sands, New Mexico, was photographed with special meteor cameras by Dr. F. L. Whipple of the Harvard College Observatory. The cameras were equipped with shutters rotating at 1,800 r.p.m. and with lenses of f/2.5 aperture and 3-inch focal length. The pictures show clearly the luminous trail of the jets and the burn-out at 27 miles above the earth. (Sky and Telescope 6: 9, April 1947). Cameras and other equipment installed in a V-2 type rocket on March 7 made satisfactory records at various distances up to 100-miles above the Proving Ground at White Sands, New Mexico. One infrared photograph taken at 100 miles showed about 200,000 square miles of the United States and Mexico. To avoid loss of the cameras and records, they were ejected from the head of the rocket shortly be-

fore its descent and dropped by parachute. Several types of special cameras and equipment were used also to record the rocket flights from the ground. The successful launching of a V-2 type rocket from the flight deck of the aircraft carrier, U.S.S. Midway, was photographed on September 6 (Fig. 5).

Further studies with an improved stereo Sonne strip camera of the U. S. Air Force were reported by Col. G. W. Goddard at a photographic meeting in Rochester, N. Y. on December 10. The stereo records were made on Aero Kodacolor film as it moves continuously past a very narrow slit in the shutterless camera at a rate synchronized with that of the ground object image. The projected images were viewed through Polaroid spectacles and showed a pronounced three-dimensional effect. The demonstration included views of the bomb damage to German cities, the Texas City disaster, and scenes in New York state.

A special color film used during the war for camouflage detection was described. It was obtained by making one of the layers of Aero Kodacolor infrared sensitive and then developing the film to give special colors. Green paint could be made to stand out clearly by a false color contrast to appear, for example, as red on a green background.

Several stereo processes for still pictures using lenticulated screens were announced during the year. Behind each embossed lens, tiny fragments are printed of each of the left and right stereo positions. When the film as a whole is viewed directly, the picture appears in relief.

**Color Photography.** The transition from black-and-white to color materials continued. It had started shortly after the introduction of Kodachrome film in 1935 and although slowed up somewhat during the war years, the use of color films such as Ansco Color, Ektachrome, Kodacolor, and Kodachrome films expanded rapidly since 1945. In May 1947 Ektachrome roll film was announced in two popular sizes, 120 and 620. This film and Ansco Color film could be processed by the user whereas the other films were returned to the manufacturer for processing. Color prints were obtainable from three sources, namely, the manufacturer of the color material, commercial laboratories, and those made by the consumers themselves.

A new color negative material called Ektacolor film was shown at the Photographers Association of America meeting in August. When supplies become available in 1948, this material can be processed by the user. The film develops to a color negative in which colored couplers form a positive mask which gives the negative a general orange appearance. This positive color mask combined with the negative dye characteristics make pos-



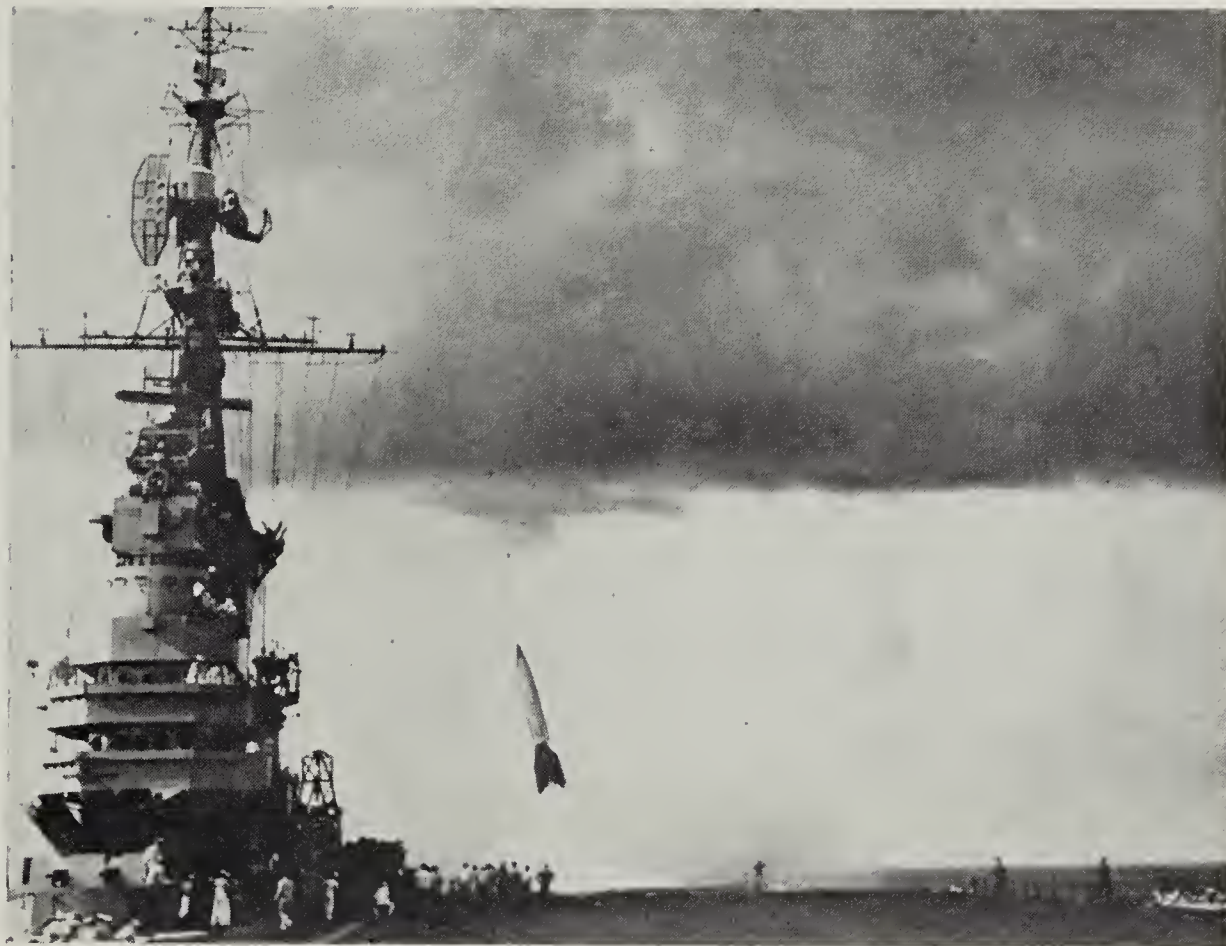
sible the printing of the three matrices directly on a new material called Pan Matrix film without the need for other tone correcting masks. As soon as the matrices are ready, color prints can be made quickly by the Dye Transfer process. No separation negatives are required and the omission of this step therefore shortens appreciably the time for making color prints compared to the use of positive color transparencies (Photo Engravers Bull. 37: 46, September 1947).

The color slide salon appeared to be growing in popularity and its practices were being standardized to some extent by the Color Division of the Photographic Society of America. Apart from professional exhibitions the number of large color prints being shown in international salons was rather small although the quality of the prints accepted was much above that of a few years ago. By far the finest exhibit of color prints was that assembled from leading studios throughout the country and displayed in August at the Chicago convention of the Photographers Association of America. The majority of the prints were made by the Dye Transfer process.

Wider use of color photography was noted than heretofore in magazines, newspaper weekly magazines, and lithographed advertising. Masking techniques for use with color transparencies were being introduced to effect improvement in quality of the final reproduction. Such methods involved the making of black-and-white negative masks for combining with the transparency when making the color separation negatives; certain corrections could also be obtained by using highlight and shadow masks. Details of these techniques were described in several issues of the Kodak Bulletin of the Graphic Arts and in articles by F. Preucil in the National Lithographer for August and September.

A new color tri-pack material was announced by the Photo Products Department of E. I. duPont de Nemours and Company. It was used for making color separation negatives with a single exposure in ordinary view cameras. The material consists of three emulsion layers on two supports. The front support holds the green and blue recording emulsions which are separated by a binder; the red sensitive emulsion is on the rear support. After all three separation negatives are developed, the green record is transferred to a new support. The product is called S-T Tripac Negative.

**Motion Pictures.** With over 80,000 motion picture theatres in operation in the world, and about 20 per cent of this number in this country, motion pictures continued to be one of the world's primary sources of entertainment. Amateur motion pictures, in 8-mm and 16-mm sizes attracted more devotees. Industrial, docu-



V-2 rocket fired from the flight deck of U. S. S. Midway.

Official U. S. Navy photograph.

mentary, and educational uses of 16-mm films expanded as noted in such trade publications as *Business Screen* (Chicago), *Educational Screen* (Chicago), *Amateur Film World* (London), and *Film World* (Hollywood). Universal Pictures Corporation in collaboration with the British firm of J. Arthur Rank, Ltd. formed United Films, Inc., for the production and distribution of 16-mm and 8-mm films.

Needed repairs and improvements were made in many of the leading studios in this country and abroad. After 18 months of work the first large studio to be built in 18 years was completed in Hollywood. Comprising 12 buildings including nine sound stages with a total area of 80,000 square feet, this studio known as the Motion Picture Center Studio will help reduce the space shortage facing the independent producing companies. A description was published of the new scoring, rerecording stage and the preview studio of Republic Productions, Hollywood, in the July issue of the Journal of the Society of Motion Picture Engineers. In Bombay, India, a large motion picture studio was built having a total floor area of over one million square feet. It was called the Famous Cine Laboratory and Studios (Amer. Cinemat. 28: 113, March 1947).

A symposium on 16-mm film problems and on film uses for television featured the April meeting of the Society of Motion Picture Engineers in Chicago. The subject of theatre engineering was discussed at their October meeting in New York. At the latter session B. O'Brien and G. C. Milne of the University of Roches-

ter described a very unusual high speed camera used to make motion pictures at the rate of several million frames per second. Known as the image dissection camera, this device had a special optical system which divides the usual rectangular image into segments and assembles them into one long narrow strip. After this image is processed, it is reassembled by printing through the same optical system by which it is formed, and thereby rectified back to the standard frames of 16-mm film. Designed primarily for analysis of motion, the camera was expected to prove useful in the investigation of electrical discharges, high explosives, and other scientific studies.

Improved duplicating techniques were reported by N. L. Simmons and E. Huse to be in use at five Hollywood laboratories. Composite duplicate negatives or master positives are frequently sent abroad for making release prints. For domestic release prints, the negative is composed occasionally of 50 per cent duplicates (J. Soc. Mot. Pict. Eng. 49: 316, October 1947).

The first Technicolor motion pictures were made in 1917 and the year 1947 marked the 30th anniversary of the process. W. R. Greene, in American Cinematographer, discussed some of the early work and reviewed the progress of the Technicolor company who have the longest successful record of any organization making color motion pictures. The first commercial theater release on 35-mm Ansco Color film was entitled "Climbing the Matterhorn." While a three-color process yields the best results, very satisfac-

(Continued on Page 66)



# "SLEEP MY LOVE"

## Cinematic Psycho-Thriller

By HERB A. LIGHTMAN

THE psychological film has, within the past few years, become standard fare on the menu of the American moviegoer. Whether this trend reflects a broadened intellectual horizon on the part of the general audience (which is extremely doubtful) or merely a self-conscious "misery loves company" appraisal of a world in the throes of mass hysteria, is a problem for those savants whose conjectures are devoted to analyses of the motion picture as a social force.

Less abstract critics, namely the men who count the gold at the box-office, agree that the psychological film has indeed been a worthwhile project in Hollywood. The cycle has produced some excellent screen drama — "Spellbound," "The Lost Weekend" and "Snake Pit," to mention a few of the best. On the other hand, it has resulted in several bush-league excursions into the realms of Freud, Jung and Adler that undoubtedly

left those worthies whirling in their respective sarcophagi.

But no matter how dramatically good or bad these several sallies into cinematic psychology have been, it cannot be doubted that they have generally been well-photographed. Indeed, the cycle has been a fine proving ground for the introduction and perfection of several interesting camera techniques. The camera has been freed from its spacial limitations and has become an important participant in the action. There has been an encouraging trend toward experimental lighting styles. The *subjective* camera has come into its own through functioning as the "mind's eye" of many a tortured celluloid neurotic. There has been some excellent *montage*, and now and again a bit of genuinely inspired psychological symbolism, such as that of the Dali-designed dream sequences in Alfred Hitchcock's "Spellbound."

Only a few designers and cinematographers have gone overboard for effects in borrowing from the obviously creaky technique of that surrealist classic, "The Cabinet of Dr. Caligari"—and most of these have been members of experimental cinema units, whose very creed demands conservative adaptations. Hollywood's "men behind the lens" have shown fine restraint and subtlety in putting psychosis onto celluloid. The American audience, traditionally cold to film-fare based on fantasy, has accepted the psychological cycle with lucrative enthusiasm—and it can be truthfully stated that this acceptance has been based, in great measure, upon the use of expertly keyed photographic presentation.

### Psychological Swan Song

Now, as public taste begins to shift from psychology back to the boy-meets-girl type of post-war impressionism, there appears on our screens an uncommonly well-produced film that tells its story of psychological undercurrents by means of a balanced blend of competent direction, good acting, and the finished photography of Joseph Valentine, A.S.C. The film thus described is "Sleep My Love," a Mary Pickford-Triangle production now in release through United Artists.

Briefly synopsised, "Sleep My Love" deals with a young woman whose insurance-minded husband is intent upon driving her mad so that she will commit suicide, thus leaving him free to enjoy the unabashed caresses of one of the sexiest screen sirens ever to get by the Hays office.

This theme is hardly original, inasmuch as the psychological cycle has brought to



"Sleep My Love," a Mary Pickford-Triangle production released through United Artists, owes much of its impact as a psychological thriller to the fine camera technique of Director of Cinematography Joseph Valentine, A.S.C., (left). The use of a few low-intensity lighting units simulates the light-source provided by the table lamp and plays down the background so that the players will dominate the scene. (Right) Valentine's glossy lighting and flattering photography of feminine subjects keeps him in constant demand by top-ranking stars.





A note of lurking menace is evident in the above scenes from "Sleep My Love." (Left) The heroine awakens from a drugged sleep in the compartment of a speeding train. The light on her face simulates the glow from the headlight of another train on the opposite track. The carefully subdued background adds dramatic force to this sequence. (Right) Appropriate projected background shadows and simple lighting sources lend suspense to this low-key sequence. Photography by Joseph Valentine, A.S.C., is appropriate to the mood, unobtrusive in technique.

the screen a whole epidemic of frustrated characters conspiring with their lovers to liquidate unwanted spouses. In fairness to the author of the film, however, it can be said that he at least shuffled the sexes of the participants. Whereas in previous psycho-thrillers it has invariably been the wife who wanted to murder the husband, in "Sleep My Love" it is the husband who wants to murder the wife—a neat switch in any man's language.

Be that as it may, the film emerges as excellent entertainment due to the absorbing manner in which its story is told. The picture opens with shots of a train speeding through the night. The heroine is shown awakening from a drugged sleep in her compartment. As she does so, the camera adopts her point of view, and the details of the room gradually come into focus. She peers out the window to see the Cyclopiian headlight of a train on the opposite track bearing down upon her. The camera *zooms* into a close-up of her face as she screams—and the film is off to what is known in the trades as a "flying start."

From that point on, the action of the plot revolves about the efforts of the husband to hypnotize his not altogether unsuspecting wife, with the object of making her walk off her balcony balustrade into three stories of fairly empty space. Friend husband keeps slipping drugs into her hot chocolate, which she dutifully continues to consume rather than have him think she doesn't trust him. The sub-plot concerns the activities of a determined young man who suspects foul play and spins his wheels in various attempts to save the hapless wife from a fate not any worse than death. Ultimately, as the reader may have suspected, love

conquers all. The husband gets his just, if somewhat gory, deserts — and the emancipated lovers, stepping gingerly over his punctured corpse, go walking off into the sunset.

#### First-rate Production Job

Even though hampered by the hackneyed plot outlined above, "Sleep My Love" ranks as highly satisfying screen entertainment mainly as the result of top-notch quality in all other departments of production. The performances of Claudette Colbert, Don Ameche, Robert Cummings and a brace of fine supporting players, are more than adequate. Direction by Douglas Sirk is smooth and intelligently conceived. But it is the skillful photography of Joseph Valentine, A.S.C., that really gives the film its aura of quality and points up whatever latent dramatic values exist in the script.

"Sleep My Love" is by no means a *cameraman's picture* in the sense that it teams with bizarre settings, fog sequences, or any of the other atmospheric clap-trap typical of the average screen thriller. On the contrary, the settings are most conventional, the fog is non-existent (except perhaps in the mind of the drugged victim-to-be), and the presentation is entirely free of situations allowing for camera trickery.

Thus deprived of all of the usual gimmicks, Mr. Valentine is to be doubly complimented for having managed to inject a good bit of visual suspense into the film. He accomplishes his purpose through the deft use of low-key lighting, unusual camera angles, and fluid camera movement. Through it all, he manages to keep his camerawork restrained so that at no time are you aware of the mechanics of technique. This sort of understatement by the

camera results in a dominant atmosphere of reality, while still allowing vague undercurrents of psychological doubt to seep through. The result is that, at least during the opening sequences of the film, the audience wonders if the heroine really *is* mad, since the externals of the situation seem to be perfectly normal.

It is not until several reels later, after the determined killer has tipped his hand, that the photography begins to take on a certain deadly *leitmotif*. Even then, however, there are no far-fetched camera devices. The low-key lighting is authentically motivated by the fact that most of the intrigue takes place at night. Indeed, the whole presentation of the story hinges on the fact that the nefarious incidents of the hours of darkness seem to the heroine like hallucinations when viewed in the anti-septic sunlight of day.

Similarly, low angles are used only when they are required by the action. One such angle adds a great deal to the sequence in which the wife, impelled by the drug-induced suggestions of her husband, walks in her sleep out onto the balcony and climbs the balustrade. The young man rushing to her rescue looks up in time to see her teetering dangerously on the railing. As he does so, the camera cuts to a low angle from his point of view and the audience is made to feel subjectively the peril of the woman. Low angles are also used effectively to accentuate the menace of the husband and his co-conspirator while they are planning their crime.

#### Lighting Plays a Role

Joseph Valentine, A.S.C., has long been regarded by the more critical moviegoer, as well as by his fellow technicians, as somewhat of a master of the art of set

(Continued on Page 55)



# MOTION PICTURE ART DIRECTION FOR EXTERIOR PRODUCTIONS

**I**N the script of the Warner Bros. film, "Silver River," the following description appeared on page 53:

"Exterior of Silver River mine. A busy, active mine, dug deep in the hillside, with a smelter plant going up on one side. Four cars are coming out of the mine, pumps are sucking and pouring out of the mine, men are passing with section of timbering, and mules are pulling ore wagons."

This was the description of one of the most important settings in the film. This was to be the locale of many scenes in the story which is based on the discovery of silver in Nevada soon after the Civil War.

The job of transposing these brief, descriptive words into reality fell to Warner's art director Ted Smith. Smith is an authority on early western settings. He spent much of his childhood around the mines of Cripple Creek, Colorado. His ancestors were miners in Wales, and he has visited and studied purely as a matter of interest all of the historic landmarks that sprang up following the discovery of gold in 1849.

His hobby of wandering through the ruins of ore and oil boom towns, crumbling adobe missions, and abandoned gold and silver mines has given Mr. Smith a thorough knowledge of the construction methods and appearances of the early day buildings which he has since recreated many times on the screen.

"Designing outdoor sets," says Mr. Smith, "interests me much more than working on sets destined to be erected on sound stages. I feel that an outdoor set presents more of a challenge, or a problem. Once you've found the location for the set, your imagination has to begin working from the ground up. The terrain gets the first consideration in relation to the amount of sunlight it receives, what sort of background the distant horizon offers, and how well the topography of the ground fits into the requirements of the script."

Art director Smith and Director Raoul Walsh found the spot for their silver mines less than five minutes drive from Hollywood and Vine Streets. At the end of Bronson Canyon, in the hills north of Hollywood lies the rugged and remote

appearing site. The land is owned by the Pacific Electric Company and was once used to quarry gravel for the company's rail beds. Since the rail company ceased operating the quarry, studios have found it to be an ideal spot for location shooting.

Having decided on Bronson Canyon as the Nevada mine site, Smith then had a still cameraman photograph the location. These pictures were used by the art director as the basis for his set sketches. Over the photos he sketched the mine entrance, the shaft house, mill, main office, two barracks buildings and 12 smaller structures. With the proposed buildings sketched right onto photos of the actual site, the director and producer were able to have a complete picture of exactly how the entire set would look when completed.

From these combined photo-sketches, more detailed sketches were drawn, and then blueprints were drafted. Within three weeks after the last blueprint was approved, the set was completed and ready for filming. Studio trucks arrived at the site with camera, sound and lighting equipment. Buses and limousines brought the cast and crew members. In a short time the deserted quarry had become what appeared to be a prosperous silver mine, teeming with workmen digging the precious metal from below the earth's surface.

However, the activity in the canyon was short-lived. A short two weeks later and the spot was once again deserted with all vestiges of its glory as a rich silver mine completely removed.

"That's one of the problems of outdoor sets," explains Smith. "If the company uses private property for their location everything must be cleared away



The above silver mine was designed by art director Ted Smith on a location in the Hollywood Hills just five minutes' drive from the center of Hollywood for a setting in the Warner production of "Silver River."



after the picture is completed so that the land appears the way it was before the studio people occupied it." Outdoor sets are left standing only in rare instances. Such is the case at the Iverson Ranch which is used only as a studio location spot. Mr. Aaron Iverson owns the land and rents it to the film companies, but anything the studio builds on the land must remain there. Over the years this has proved to be a profit making rule. Gradually a variety of sets have accumulated on the ranch which can be used by all the studios and which brings a higher rental fee for Iverson than just the rocky, scenic terrain.

Each studio art director usually has to do some remodeling to the standing sets before they will fit the requirements of his particular production. Its not unusual to find a building that appears to be a ranchhouse in the front, a bank on one side, a jail on the other, and a brick post-office in the rear.

For thirty years Ted Smith has been designing sets for motion pictures, and from the time of his first film, "Covered Wagon," he has always been given difficult assignments. He recalls the recreation of the famed boat, Old Ironsides, as one of his most intricate sets, which was made for the picture "Old Ironsides."

For "Captain of the Clouds" director Michael Curtiz found a Canadian location which was fifty miles from the nearest village and accessible only by a back country trail. The fact that the retreat was cut off by a beaver tribe which built a dam across a stream and flooded the trail—it sounds incredible, but it happened—was merely an incidental nuisance. For this location Smith designed a cabin and pier to be erected on the edge of the small lake. The entire set was tailored to meas-



Cabin and pier designed by Ted Smith for Canadian set of "Captains of the Clouds." It was constructed at the studio and shipped knock-down to the location 2,000 miles away.

ure in Hollywood a month before the company left the Burbank studio. The ready cut aged-in-the-studio lumber was portaged in, where a crew of carpenters worked in knee-deep water to assemble the structures.

The restrictions on travel during the war years added greatly to the problems of location filming. It was during the war period that Smith was assigned to recreate a Burmese village and jungle for the film "Objective, Burma!", but the location spot had to be within a radius of twenty-five miles of Hollywood. Smith found his jungle setting in the Bird Sanctuary near the small town of Whittier which is on the outskirts of Los Angeles. Dense foliage, wild grape vines trailing from gigantic trees and ferns and plants provided just the right tropical atmosphere.

As the spot for the Burmese temple and village, the site of Lucky Baldwin's historical Santa Anita rancho was chosen. This tract of land, upon part of which the Santa Anita race track now stands, has a variety of scenery ranging from rugged hills to a picturesque lake and an adobe building which was built by Baldwin and carries the name of the Queen Ann cottage. It was this cottage which Smith converted into a Burmese temple by means of some simple temporary alterations. Small native huts were constructed around the temple, and as if by magic, the locale appeared to actually be Burma.

With the war's end film companies began seeking out authentic settings. "The Treasure of the Sierra Madre" was pho-

(Continued on Page 64)



The Queen Ann cottage (left) at Santa Anita rancho (only a short drive from the studio) becomes a Burmese temple under the art direction of Ted Smith, who revamped the building for "Objective, Burma." The same wizardry in art direction transformed a small lake of a bird sanctuary into a Burmese setting for the same production.



# SOCIETY of MOTION PICTURE ENGINEERS

## *Spring Convention in* HOLLYWOOD MAY 17-21

**S**OCIETY of Motion Picture Engineers will hold its 63rd semi-annual convention and technical sessions in the Hollywood area May 17th to 21st inclusive, at the Santa Monica Ambassador Hotel, Santa Monica, California—12 miles from the center of Hollywood.

Because of the increasing number of members and guests attending the Hollywood conventions during the past decade, convention vice president William C. Kunzman—in checking hotel and meeting room accommodations in Hollywood—found that the Santa Monica Ambassador was the most suitable headquarters for the sessions. The hotel, fronting on the Pacific Ocean, will provide an unusual setting for members from the midwest and east.

Kunzman was in Hollywood during the past month, conferring with SMPE president Loren L. Ryder and other coast officials of the organization in setting plans for the May convention, which is expected

to be the greatest in the history of the SMPE. Visitors can make reservations for the Santa Monica Ambassador, where all technical sessions and meetings will be held, or at the closeby Del Mar Beach Club and Miramar Hotel.

At least 10 technical sessions will be held during the five day period, Kunzmann disclosed. As has been the practice in former coast conventions, papers and demonstrations will center on new practices, procedure and equipment in the studios for motion picture production. At least one technical session will be devoted entirely to color processes in motion picture photography; while other meetings will concentrate on developments in television and the 16 mm. amateur and professional fields.

To handle the various details for large number of members and guests expected, a complete list of committees has been set up. S. P. Solow will function as head of the Pacific Coast Section and Local

Arrangements committee; while Mrs. Solow heads the Ladies Reception committee. G. F. Rackett heads the Luncheon and Banquet Committee; and Watson Jones is chairman of the committee on hotel reservations. Reservations for hotel accommodations should be made with Jones as early as possible: address RCA, 1016 North Sycamore Ave., Hollywood 38, Calif.

Gordon A. Chambers, as national Papers Committee chairman, is currently receiving a large number of papers to be presented at the various technical sessions. As vice-chairman on the West Coast, N. L. Simmons, Jr., is assembling papers and demonstrations from a large group of studio engineers and technicians. It is expected that the technical sessions will disclose many radical and improved practices and equipment which have developed since the end of the war.

Business and technical sessions of the convention will be held in the sixth floor Magnolia Room of the Santa Monica Ambassador. Regular convention get-together luncheon will be held at noon, May 17th, in the Ocean Room of the Del Mar Beach Club; while the usual convention banquet will be held in the Ambassador Magnolia Room on evening of May 19th.

### South African Airliner Tests Film Showings

Film showing on a passenger airliner in the Union of South Africa, using an Ampro Premier-20 16 mm. sound projector, was tested successfully recently, with officials of the airline considering equipping long distance craft with projectors for film shows.



When the Society of Motion Picture Engineers held a Board of Governors meeting last month, members in New York and Hollywood conducted the session via telephone hook-up. Above (left) the Pacific coast meeting is attended by Charles R. Daily, L. T. Goldsmith, C. E. Sawyer, president Loren L. Ryder, convention vice president William C. Kunzmann, S. P. Solow, Herb Griffin, and John Boyle, A.S.C. At right is the Santa Monica Ambassador hotel, on the shores of the Pacific, which will be headquarters for the SMPE spring convention in May.



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# Some Considerations Toward Set Lighting Economy

By PETER MOLE, A.S.C.

PEOPLE interested in effecting economies in set lighting costs have asked why studio carbon lamps cannot be operated in series without the use of grid resistance ballasts. The answer is that they can be operated in series without ballasts and used in that manner for making motion pictures provided the user is willing to tolerate certain disadvantages.

For example, if a single gas set capable of supplying power for ten Type 170 lamps was available on a location and, for a given shot, more lamps were needed, by eliminating the ballast from all lamps and operating twenty, in series of two, the same generator would supply sufficient power.

The advantage of series operation without ballast are: twice the number of lamps from a given studio power source, elimination of the weight of the ballasts and reduced initial cost. The disadvantages are: less arc stability, more manual operation and less light from each unit.

Table I shows what is to be expected of Type 90 or Type 170 lamps operated in series without ballast, and with 12 volts of ballast, as compared to operation with normal ballast.

With the series operation tests the light from one lamp was trained on the photocell of the light meter. Both lamps were carefully controlled to maintain equal current and arc voltage conditions. If the arc gap in one lamp were allowed to become shorter than the other that lamp would consume less than its share of the total wattage and the light output of the two lamps would be unequal.

When a high intensity carbon arc lamp is operated singly, with its associated ballast, only periodic manual adjustment is required to maintain the proper arc position and continuous steady light output after the initial adjustment.

When two arcs are operated in series, the performance of each lamp is directly affected by the operation of the other. Thus, one lamp in good condition and perfectly adjusted will operate erratically if the operation of its mate should for some reason become abnormal. When two arcs are so connected a considerable amount of attention is required to maintain a balance of inter-dependent arc conditions necessary for reasonably steady light output from each lamp.

## SERIES OPERATION OF TYPE 90 AND TYPE 170 LAMPS

Line Volts	Grid Volts	Current * (Amps)	Arc Volts **	Relative Light (percent)	Range of Light Fluctuation ***
<b>Type 90 — Single Lamp with Standard Grid</b>					
115	60	120	55.	100	2 to 5
<b>Type 90 — Two Lamps in Series</b>					
115	0	110	57.	86	10 to 15
115	4	105	55	83	10 to 15
115	12	100	51	69	5 to 10
<b>Type 170 — Single Lamp with Standard Grid</b>					
115	50	150	65	100	2 to 5
<b>Type 170 — Two Lamps in Series</b>					
115	0	140	57	65	10 to 15
115	12	135	51	60	5 to 10

\* For lamps operated in series, current shown is maximum obtainable during test with stable arc operation.

\*\* For lamps operated in series, arc voltage shown is the same in each of the two arcs.

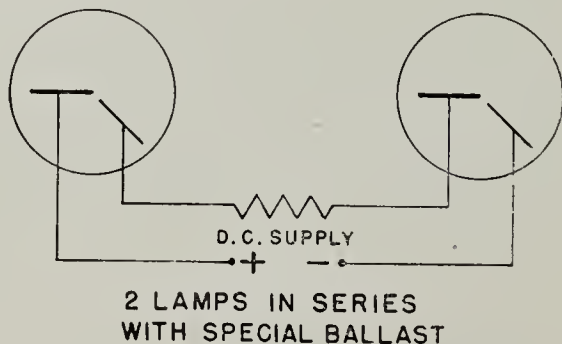
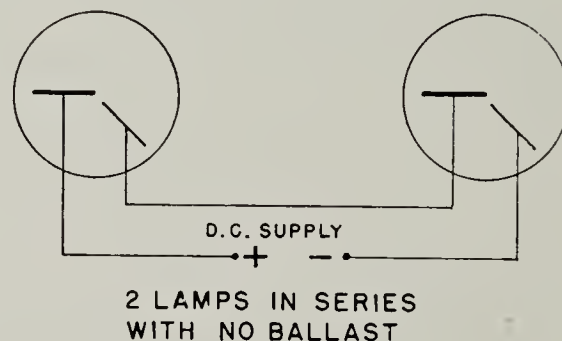
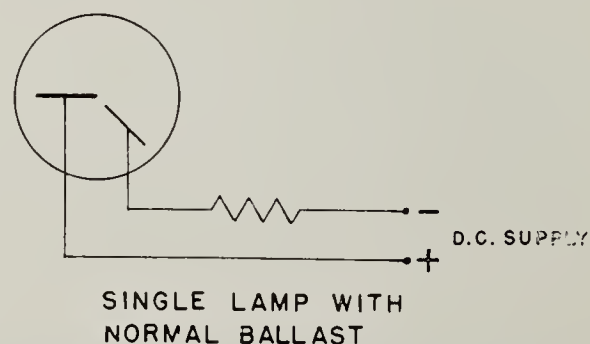
\*\*\* Approximate range of fluctuation from recording microammeter charts expressed as percent of mean light level. Figures indicate the range of fluctuation that may be expected with reasonable amount of manual adjustment.

The addition of resistance ballast between two lamps in series improves the steadiness of operation and lessens the frequency of manual adjustment necessary to maintain a given steadiness of light. The greater this resistance, the less manual adjustment required. As the resistance is increased the light level decreases as indicated in Table I. In the tests shown in this table it was determined that the optimum condition for steadiness without extreme sacrifice of light was with a ballast resistance of 12 volts between the two lamps. The M-R Duarc broadside lamp is an example of successful series operation utilizing sufficient grid ballast for arc stability.

This lamp, however, is of the flame arc type having carbons in co-axial alignment and the problems of series arc operation are few as compared to those encountered with the more critical high-intensity arcs having carbons in angular alignment.

Under proper conditions of power supply it is practical to use a high intensity carbon arc lamp singly and without ballast. During the late war we were called upon to manufacture a high intensity carbon arc searchlight element for use in tanks. By using an individual power source with the proper regulation charac-

(Continued on Page 64)





# News Services Launching 16mm. Television Newsreels

OF major importance to the 16 mm. branch of the film industry is the entry of the three American news services—Associated Press, United Press, and International News Service—into the field of newsreel production for television broadcasting.

Establishment of television newsreel units by each of the wire services was announced last month, and immediate progress is reported in organizing the field forces for actual production and assemblage of current news events around the country for speedy televising in stations within 36 hours after the film clips have been shot by the cameramen in the field.

Initially, material for the newsreels will be entirely supplied by staff cameramen for the three services. However, when organization is finally perfected for smooth collection and distribution of the film clips, there is no doubt but what outside free lance material will be accepted. This will undoubtedly prove decidedly profitable to professional and amateur 16 mm. motion picture photographers, many who might eventually be

engaged as staff representatives in their communities and districts to photograph special news events required by the television newsreels; similar to the present system of having accredited reporting correspondents in localities distant from news service offices and staffs.

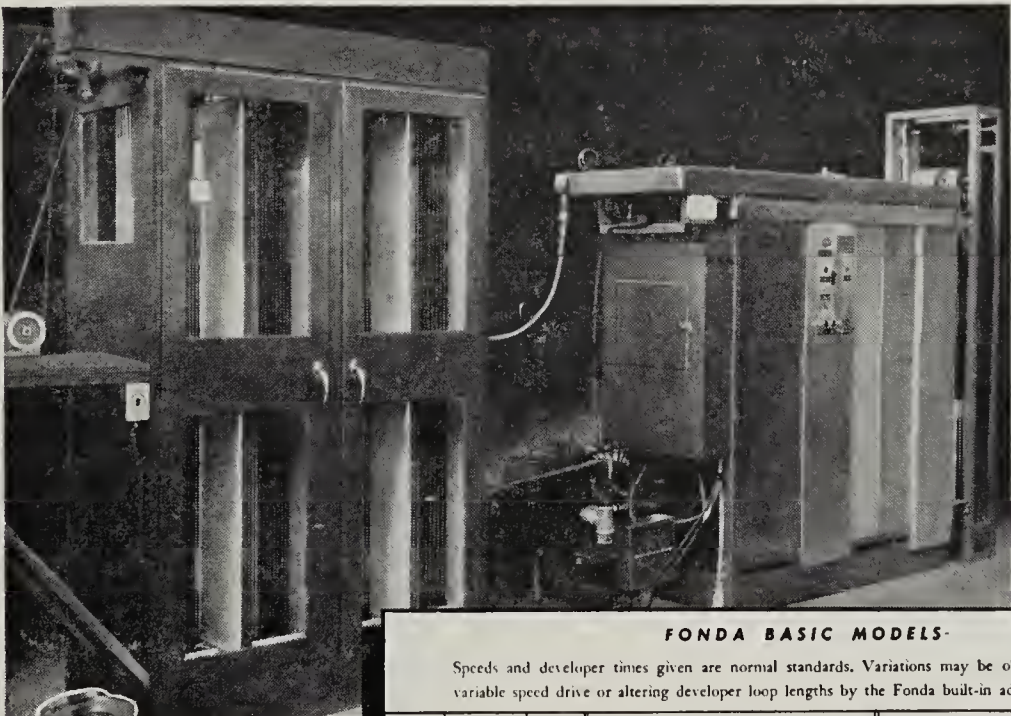
The initial organization of 16 mm. cameramen and reporters for the television newsreels will undoubtedly follow the pattern of the Associated Press setup. Latter will have five filming units operating in key sections of the country to start. Newsworthy events will be covered by the photographic units in each area daily, with descriptive commentary written by an AP reporter attached to the unit.

Negative will be quickly developed and edited by the particular unit, and prints struck off for each television station around the country subscribing to the service. These prints of the filmed newsclips will be immediately airmailed to the stations, which will allow for television broadcast of the subject in all parts

of the country within 36 hours after the particular event happened.

Each individual television station will assemble the filmed news clips—received from the central AP photographic offices—into one reel for presentation. It is expected that sufficient flow of footage will ensue to provide a daily presentation of news subjects by each station, but the length of each reel will depend entirely on the amount of footage received. At this point, it does not seem to be the intention of AP, UP, or INS to attempt any specific minimum or maximum length of the daily reels; latter will depend entirely on the daily film contributions supplied. Undoubtedly, many television stations will contract for the film supply of all three services, and select program of subjects much in the same manner as is currently done by radio stations for news broadcasting.

Although the present number of operating television stations around the United States is limited, and the news services do not anticipate immediate profitable returns from the special television newsreel services, it is expected that eventually — when the large number of projected television stations are in operation within the next few years — the film service will be a valuable branch of the news wire facilities.



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When uncontrolled film slack steps in, out goes your operating efficiency. And profits tumble accordingly. The Fonda film developing machine *completely eliminates* this problem through the patented Fonda top-friction drive mechanism . . . which completely controls the film in process so as to eliminate all slack. Processes any type of 35mm or 16mm film (see chart).

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FONDA BASIC MODELS-											
Speeds and developer times given are normal standards. Variations may be obtained by adjusting variable speed drive or altering developer loop lengths by the Fonda built-in adjustment mechanism.											
FILM TYPE	FILM SIZE	MODEL NO.	APPROXIMATE OPERATING SPEEDS			APPROXIMATE MACHINE SIZES Includes Feed Elev. & Work Tables Both Ends					
			Positive 4 Min. Dev.	Negative 9 Min. Dev.	Reversal 6 Min. 1st. Dev. 6 Min. 2nd Dev.	WET END			DRY END		
						Length	Width	Reqd. Ceiling	Length	Width	Height
Negative	16 mm.	F-1012 F-1021		29 fpm 58		6½ ft. 9	3 ft. 3	12 ft. 12	5 ft. 7	3 ft. 3	7 ft. 7
	16/35 mm.	F-3008 F-3018		17 34		6½ 9	3 3	12 12	5 7	3 3	7 7
Positive and Negative	16 mm.	F-1011 F-1014	65 fpm 131	29 58		9 13	3 3	12 12	7 9	3 3	7 7
	16/35 mm.	F-3017 F-3022	39 78	17 34		9 13	3 3	12 12	7 9	3 3	7 7
Reversal	16 mm.	F-1008	44	29	44 fpm	13	3	12	5	3	7
	16/35 mm.	F-3016	26	17	26	13	3	12	5	3	7
			Microfilm 3½ Min. Dev.		Anso Color 12 Min. 1st. Dev. 15 Min. Color Dev.						
Microfilm	16 mm.	F-1020	75 fpm			9½	3	12	7	3	7
	16/35 mm.	F-3015	44			9½	3	12	7	3	7
Anso Color	16 mm.	F-1009 F-1002			43 fpm 87	16 26	3 3	12 12	5 7	3 3	7 7
	16/35 mm.	F-3013 F-3004			26 52	16 26	3 3	12 12	5 7	3 3	7 7



# Ansco Official Explains Film Shortage

Terrific increase in the use of all types of film—motion picture, x-ray, still negative materials, color films, etc.—since the end of the war, is directly responsible for the present shortage of film on the dealer's shelves. Despite the fact that the manufacturers of all types of film have greatly increased annual output during the past two years, in contrast to the volume of such materials turned out in 1941, there definitely is a shortage of certain types of film stocks—and this condition will probably continue for some time.

Shortages particularly apply to 8 and 16 mm. color negative, according to information received from various parts of the country. Dealers apparently have been placed on quota basis, with monthly allotments of such films from the suppliers. And the necessity of parceling out the small number of rolls of these sizes to regular customers becomes a great problem to every dealer and store.

It must be pointed out here that the film shortage now or at any other time, is not desired by the manufacturers. The latter are doing everything possible to step up output to bring it on a level with consumer demands. But film coating of machines in the factories are precision-made affairs and require many months of

machine work by precision machinists before completion. Such added emulsion-coating machines, it can be reported, are well along towards completion; and when they are installed and operating, the shortage will be considerably eased.

The situation is explained by Allan Williford, general manager of Ansco, who states that "increased demand seems to be the principal reason. More people have money to spend and the prices of light-sensitive materials have not risen as much as the national income or most other consumer products. People everywhere have purchased new cameras or picked them up abroad. They are taking more pictures than ever before and are using more color film which takes longer to make.

"Many new industrial concerns, as well as hospitals, have become users of X-ray and other special films in large quantities. During the war, new uses were found in industry for photographic processes which helped long-established firms to increase production.

"Although the manufacturers of cameras, film and chemicals had anticipated a post-war demand greater than that of 1939, the industry does not have enough machines and buildings to produce these

materials in large enough quantities at the present time, even though more photo supplies are being made than ever before.

"Ansco, for example, has the largest payroll in its history, both in number of workers and the wages they receive. The company is producing much more film than in 1939, many more cameras, and sales are ahead of production. We still have to apportion our products to dealers who could sell much more than we can produce."

One particularly scarce item in 8 and 16 mm. film is the magazine-load type. Several new brand names of minnie cameras using the magazine load have appeared on the market since the war to greatly increase the demand for this type of film pack. Further, the film manufacturers are handicapped by the shortage of metal required to make the film pack containers, which accounts for the shortage of the magazine-load film for amateurs.

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**8 to 16**

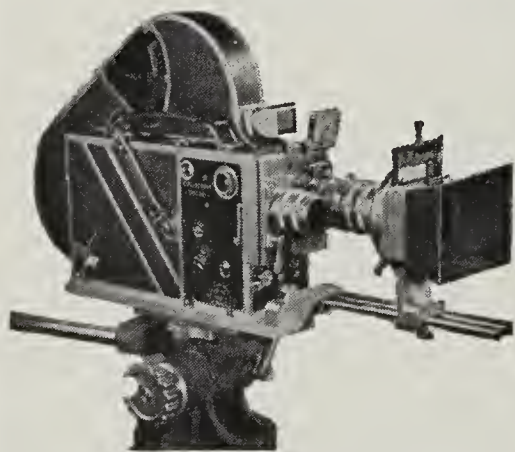
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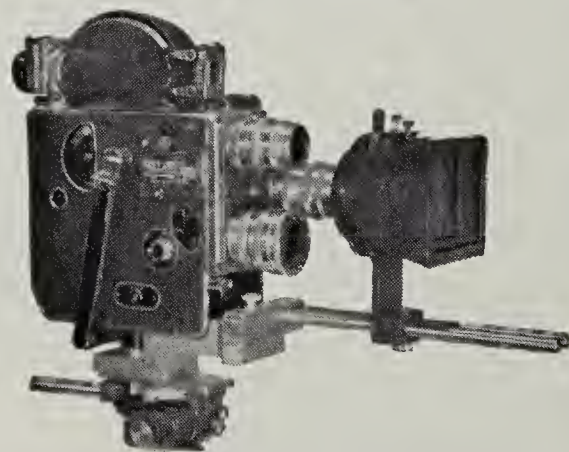


The Sunshade-Filter Holder is supported by a double arm bracket. This attaches to a plate which you can fasten on to the base of your camera where it can remain at all times if you desire. The Sunshade-Filter Holder is demountable into 3 small units which, when not being used, fit into your camera carrying case.

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For E. K. Cine-Special, Bolex, Filmo and other fine 16mm cameras. It resembles the professional 35mm type Sunshade Filter Holders and Matte Box generally used with professional 35mm cameras.

Designed for use with all popular types of 16mm cameras, the "Professional Junior" Sunshade and Filter Holder holds two 2" square glass filters, also a 2½" round Pola Screen with handle which can be rotated for correct polarization. By using our Sunshade and Filter Holder you will not require filters of various sizes as the 2" square filter will cover all lenses from 15mm to 6" telephoto.



Compact, simple to assemble or dismount, the entire Sunshade-Filter Holder and 2 filter holders which are supplied are precision-made of non-corroding metals. Every serious cameraman appreciates the advantages that accrue when a fine Sunshade-Filter Holder like this is used.

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## "SLEEP MY LOVE"

(Continued From Page 47)

lighting. Not only is he in constant demand by many top-ranking stars because he has the knack of making them look especially good on the screen, but he is popular with directors because his long career as a Director of Photography has given him an unusually acute instinct for fitting the key of lighting accurately to any sort of situation.

It is difficult to describe the peculiarities of his style, since that style is free of any affectations. Nor can it be said that his camerawork is "dynamic," since he never allows the camera as such to intrude into the screen narrative.

In "Sleep My Love," Valentine has given a generally glossy treatment to the overall presentation of the story. In the more dramatic sequences, he uses a few small lighting units to play down the background and point up the action. This approach is especially effective in the sequences which take place in the home where the murder is to be committed. Because of the focus of attention provided by the lighting, the mind of the audience is concentrated closely upon the action.

One sequence of the film story revolves about a Chinese wedding, and in this sequence the cinematographer has created a fine visual effect through the combined use of soft lighting and projected shadow patterns. This softer variation of lighting style is important to the narrative because it introduces a note of normalcy into the otherwise menaced existence of the heroine. For a moment she is freed from groping shadows and cross-lighted intrigue; the atmosphere in which she moves is clean and mellow and reassuring. Such light and shade in treatment forms an effective contrast to the more dramatic passages of action.

Valentine uses the wide-angle lens to sharp advantage in pointing up the subtleties upon which depends much of the film's suspense. One of the several antagonists in the film is a sinister character with thick-lensed glasses who keeps appearing and disappearing with the intention of making the heroine believe that he is one of her hallucinations. One of his "bogey-man" props is a claw-like hand with which he scratches at the furniture during periods of materialization. In order to accentuate this characteristic mannerism for best effect, Valentine used a wide-angle lens. In the resulting composition, the hand was foreshortened to dominate the scene and call attention to itself.

"Sleep My Love" is a fine example of camera used with proper emphasis. At no time do photographic mechanics intrude; rather, they accurately interpret the action of the script and point up the subtle shadings that are so important in the psychological film.



## Sadie Was Sensational

Yes, Sadie made her reputation in "Rain," but "Rain" or shine, Mole-Richardson lighting equipment was helping make those epic pictures that pioneered many modern-day entertainment techniques. During the last twenty years "Molinkies" and "Molarcs" have been standard equipment in every major motion picture studio, winning five Academy "Oscars" for their contributions to the film industry. Today they are preferred by professional photographers everywhere.



### The M-R MIDGET

Here's a small lighting unit that offers real illuminating punch. Designed around a 4½-inch Fresnel condenser lens, and a 200-watt globe, it gives five times the usable illumination of other small lamps. It's ideal for filling shadows or as a prime light source for table-top photography. Price delivered, including base-plate, 25-foot cord with switch, globe, and Excise tax \$25.40.

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# AMONG THE MOVIE CLUBS

## New York Metropolitan

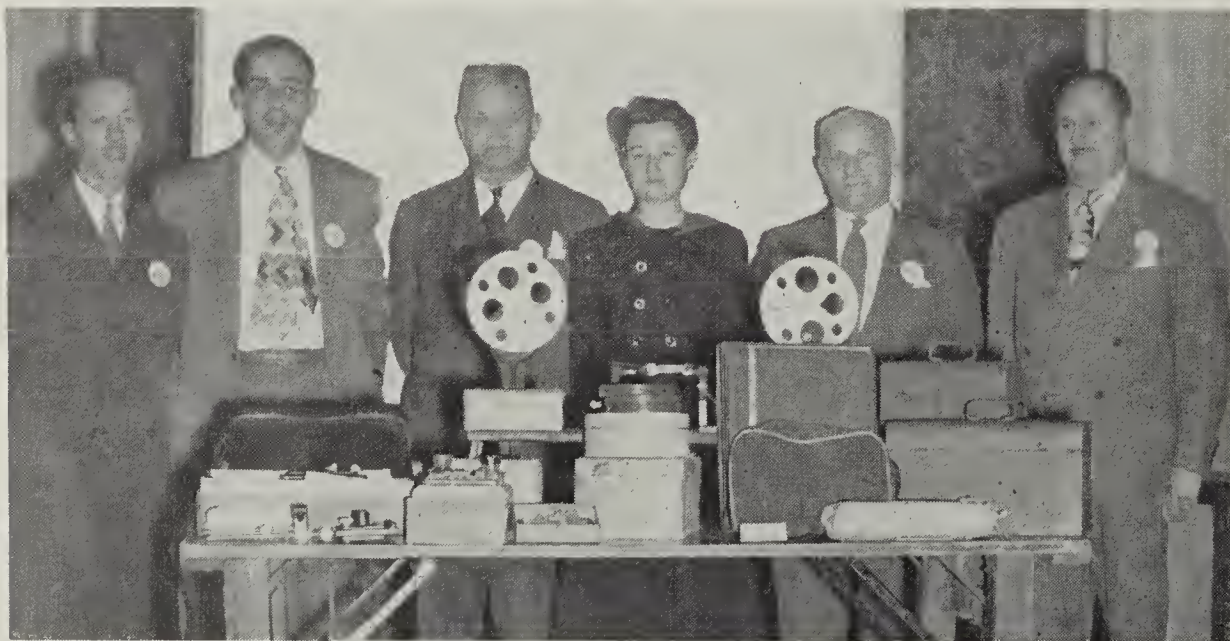
George Mesaros won the grand prize of \$75 in the General Contest of Metropolitan Motion Picture Club of New York City for his 500 feet, 16 mm. kodachrome film, "A Few Trees Please." "New Horizons," by Charles Manley DeBevoise, was runner-up to the winner, and took second prize of \$50. Frank Gunnell received third prize and \$25 for his "Historic Richmond Day." DeBevoise's film was the first contest entry in the club's history having 16 mm. sound on kodachrome. Total of 14 entries vied for the attention of judges.

Films screened at the January 15th meeting included: "Lake Placid," by Joseph Harley; "Two Kids and a Pup," by Joseph Hollywood; "Conducted Tour," by Helen Loeffler; "Tender Friendship," and "Vanishing Order," by Tatsuichi Okamoto of Japan; and "It's All Over," by Terry Manos.

## Milwaukee Amateur

Tenth anniversary banquet and installation of officers of the Amateur Movie Club of Milwaukee was held in the Lotus Room of the Plankinton Hotel on evening of January 14th, with event attracting large turnout of members and guests. Program had added attraction of presentation of prize winning films, and awarding of "Oscars" and certificates of merit to winners in the club contest.

Richard J. Franzel leads Milwaukee Amateur for the coming year; with Robert H. Jansen, vice president; Harold F. Sonnemann, treasurer; and Naomi Gauger, secretary. Club bulletin announced the passing of Norville Schield, former president and a leader in amateur cinematography.



WINNERS in annual contests of Brooklyn Amateur Cine Club, and the splendid prizes awarded. Left to right: Bert Seckendorf, first place in advanced group; Charles H. Benjamin, second in advanced group; Burton C. Rackett, third in advanced group; Mrs. Bert Seckendorf, winner in novice class; Irving Flaumcuhaft, third in novice class; and Charles Rose, second in novice division.

## Los Angeles Cinema

Three prize winning films in the silent division of annual contest of Los Angeles Cinema Club were exhibited for members' enjoyment at the January 5th meeting held at the Ebell Club, including: "Tripoding Through the Canadian Rockies," by Charles M. Peters; "Timber," by William J. Keim; and "In Our Garden," by Mildred Caldwell. Added feature was the discussion of the good and poor points of the individual films by Herbert Farmer of USC camera department, who served as a judge in the contest.



NEW OFFICERS of Los Angeles 8MM Club installed at recent banquet. Left to right: W. E. Fackler, treasurer; Florence Beazell, secretary; Al Larsen, vice president; and Paul W. Cramer, president.

## Washington Cinematographers

Third monthly showing of entries in annual contest of Washington Society of Cinematographers was held at the January 19th meeting of the organization, and films included: "Yosemite," by Harold Wagar; "Skiing the Northwest," by Ted Sarchin; "Silhouette," by Don Sutherland; "Anticipation," by Joe Gray; and "Ice Capades," by Bill Kuhl. At the December 15th meeting entries screened comprised: "Ice Thrills of 1947," by Ray Park; "Rainbow Land," by Wagar; and "In the Good Old Summertime," by Wilbur Comings.

## Philadelphia Cinema

Program chairman Al Nichols arranged a fine list of films for the January 13th meeting of the Philadelphia Cinema Club, held at Franklin Institute. Pictures exhibited included: "The Big Show," by A. L. O. Rasch; "Washington. Our Nation's Capitol," and "Trip to Luray, Virginia," by E. K. Esser. All subjects had turntable music accompaniment. Roland Hoot delivered a talk on "New Developments in Pictures, Films and Projectors."

## Syracuse Cinematographers

LeRoy Felton was elected president of the Cinematographers Club of Syracuse at meeting held on January 8th. Other officers who will function for the coming year are: D. Lisle Conway, vice president; Miss Dorothy Warner, secretary; Walter Kellogg, treasurer; Elmo Golly, membership chairman; and Conway, program director.

Club's latest production, "In the Nick of Time," a 400 feet, 16 mm. "melly-dramy" is now ready for exchange with other amateur movie clubs around the country that might like to have the subject for entertainment at future meetings. Any clubs desiring to borrow the film should contact Miss Dorothy Warner, 153 Lilac Street, Syracuse 8, N. Y., for bookings.

## San Francisco Westwood

Mr. and Mrs. William Helms won first prize in the member film contest of San Francisco Westwood Movie Club for "Baby's Own Story." Ralph Elliott drew second spot with "California Highlights"; with Joe Pissott in third place with "Dizzy Days." Annual dinner of Westwood was held at Venito's on evening of January 24th.

## San Francisco Cinema

San Francisco Cinema Club held regular monthly meeting on January 20th at Women's City Club, with films screened including: "Sweden Bound via Gulf of Mexico," by Mrs. Alma Frick; "Miracle Flame," through courtesy of P. G. & E.; "Looking Down Across the Border," by Ben Hechinger; and "Color Quest," color slides by Matt Draghicevich.

## Alhambra La Casa

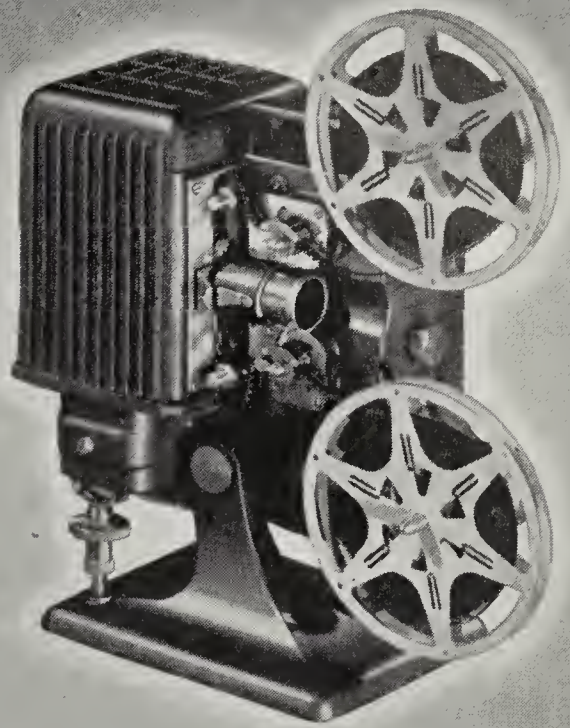
Films exhibited at the January 19th meeting of La Casa Movie Club of Alhambra, Calif., included: "Frail Children of the Sun," by Charles J. Ross; "Fishing at Guadalupe," by Fred W. Gill; and "Cycling Through Yellowstone," by Stanley Midgley.



# To show your movies at their brilliant best

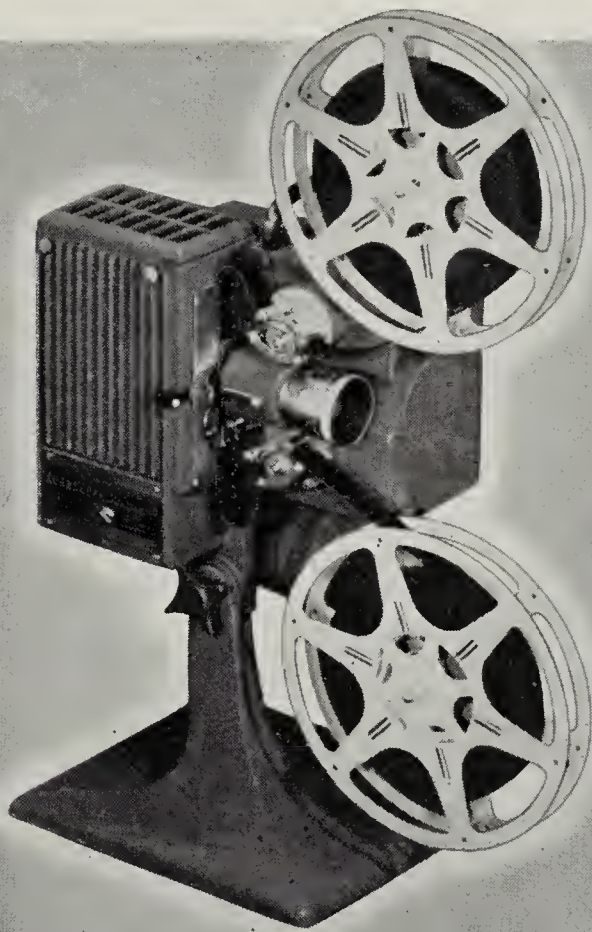
*It's no wonder these four fine Kodascope projectors are so popular... no wonder they're sometimes so hard to find. Yet Kodak is making more movie equipment than ever—keep in touch with your Kodak dealer.*

**EASTMAN KODAK COMPANY, Rochester 4, N. Y.**



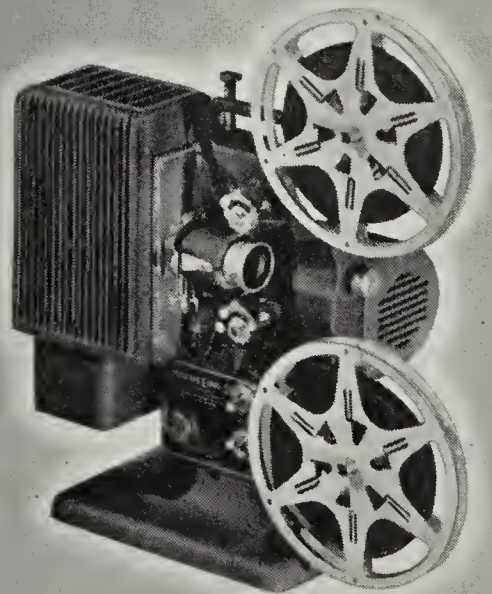
## **NEW: KODASCOPE EIGHT-90**

Bigger, brighter, better 8mm. movies from a super-fast  $f/1.6$  lens and brilliant 750-watt lamp. Luxury operation, too, from features such as loop-formers, "still" and reverse projection. \$175—complete with case.



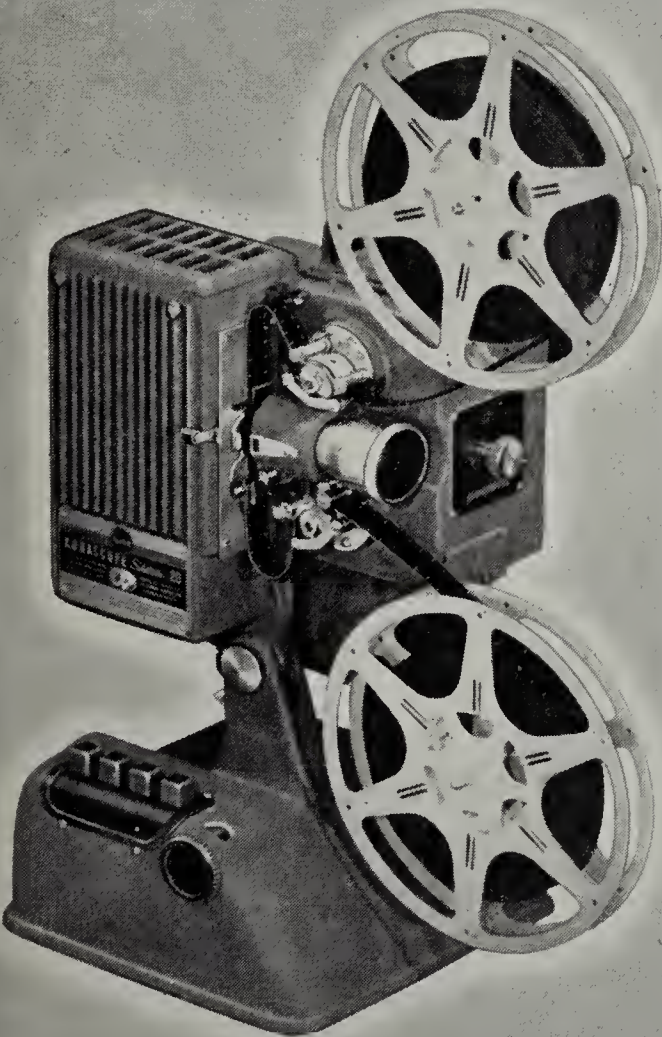
## **KODASCOPE SIXTEEN-10**

Accepts any of six lenses, any of four lamps up to 1,000 watts—you can fit your shows to the size of your audience. It's economical, too—only \$127.50 with 2-inch  $f/1.6$  lens and 750-watt lamp.



## **KODASCOPE EIGHT-33**

Simple and positive in operation, the "Eight-33" provides plenty of light for average 8mm. home shows from its 500-watt lamp and  $f/2$  lens—Lumenized, as are ALL Kodascope lenses, for greater brilliance and detail. \$78.



## **KODASCOPE SIXTEEN-20**

The same lens-lamp versatility as the "Sixteen-10"—coupled with projection "extras" such as push-button controls, "still" and reverse projection, Cordomatic power cord. With  $f/1.6$  lens, 750-watt lamp and standard case—\$245.

**Kodak**



# The Cinema Workshop

(For Semi-Professional and Amateur Production)

## 20. (Conclusion) Distributing Your Film

By CHARLES LORING

Every film that is produced has a purpose behind it. The Hollywood photoplay is produced for the purpose of entertaining millions of American and foreign moviegoers whose admissions at the box office will mean profit to the stockholders. The commercial or industrial film is made to interest prospective customers in a particular product. The educational film is made to train students in schools or employees in industry. The newsreel and documentary films are made to record current events and to interpret these events in terms of their influence upon the social scene.

Granted that the producer knows in advance the purpose for which he will use his film when it is completed, there still remains the physical problem of releasing and distributing the picture. This problem depends upon several important factors: the general category into which the film itself falls, the type of audiences sought, the extent of the potential "market" for the picture, and the distributor's actual physical set-up for getting the film accepted and shown in the right places.

It can readily be seen that proper distribution is of the utmost importance to the producer and worthy of at least as much time and effort as the actual production of the picture — for unless the film can enjoy the widest possible release within the scope of its type and subject, a good bit of the time, effort and expense of production will be wasted.

It behooves the wise producer to fully investigate distribution possibilities before he gambles his assets on the production of a film. Many a hapless movie-maker has devoted much expensive effort to the production of a film that "seemed like a good idea" only to discover, when the picture was all completed, that he had not the vaguest idea of what to do with it.

### Factors To Be Considered

In order to fully appreciate the problems of distribution, let us consider one by one the factors which must be taken into account in releasing a film.

The first element to be considered is the general category into which the film falls. The main categories are: (a) *The entertainment film or photoplay*, (b) *The commercial or sales promotion film*, (c) *The industrial or technical film*, (d) *The*

*newsreel and documentary film*, and (e) *The educational or training film*.

The entertainment film or photoplay has, up until fairly recently, been restricted almost entirely to the 35 mm. studio product released in established theatres. An offshoot of this veritable monopoly is the policy instituted some years back by the more progressive studios of releasing selected 35 mm. photoplays in the form of 16 mm. reduction prints available for private or public showing on a rental basis. These prints, however, are customarily not released until a year or more after the release of the 35 mm. version.

The 16 mm. feature print field has now developed into a thriving industry in its own right due to the tremendous increase in the number of sound projectors which have been purchased in recent years by individuals and organizations. In order to fill the demand thus created for feature pictures, a number of companies have been formed to shoot fictional photoplays in 16 mm. direct sound. Many of these companies have thoroughly professional staffs of Hollywood-trained technicians. They use the finest of equipment, and the quality of their product compares not too unfavorably with that of professional 35 mm. photoplays. Such companies either handle their own distribution, or turn that phase of operations over to a separate organization engaged solely in the business of distribution.

### Films for Commerce

The *commercial or sales-promotion film* is just now really beginning to come into its own. Business interests have discovered that the most direct, forceful and lasting impression that can be made upon the consumer is an intelligent combination of sound and visual presentation, especially when "dressed up" with color and first-rate background music. Producing organizations devoted exclusively to the production of this sort of film have sprung up in profusion within the past few years. They are concentrated mostly in New York and Hollywood, although individual companies exist in almost every large commercial city in America.

The distribution of the *commercial film* is usually handled by the client himself. If his product is of a type that appeals to a

more or less limited clientele, the picture should have a similar appeal. If, on the other hand, the product is manufactured for the general public, then similarly the film will have to be distributed to reach the mass audience. Such distribution is usually arranged by means of showings before civic groups, clubs and trade organizations, as well as before audiences at fairs and conventions. Where the audience-appeal of the picture is more limited, the client will often send his sales representatives out with prints of the film and portable projectors which can be set up quickly right on a prospective customer's desk.

The *industrial or technical film* is similar to the *commercial film* in that it is made for the purpose of influencing an audience favorably toward a certain organization, product or service. It differs in that it is more technical in content, more straightforward in cinematic approach, and more restricted as to its potential audience. It also concentrates less on entertainment value, although a great many industrial films do have a great deal of audience appeal.

The *industrial film* finds its greatest audience among technicians engaged in specific industries. It is especially welcome for showing at meetings of professional clubs, scientific organizations, and at conventions. While the scope of its distribution may be small in terms of number, it is a relatively simple matter to arrange for this type of picture to reach the "right" people, since there usually exists a pre-established interest in the film's subject matter.

### Films for Enlightenment

The *documentary film* and its smaller brother, the *newsreel*, both come under the general heading of *motion picture journalism*. The newsreel was conceived first as a straight reportorial medium designed to present factual news in an unbiased manner. European producers like Paul Rotha and Robert Flaherty, as well as such American producers as Pare Lorentz and Louis de Rochemont went farther in delving into the facts to analyze the causes and effects of social phenomena. The result was the *documentary film* which presents in editorial fashion the *pro* and *con* of important social problems.

The distribution of newsreels is handled exclusively by four or five newsreel companies which are subsidiaries of the principal Hollywood studios. Certain series of documentary films, such as "The March of Time" and "This Is America" are handled in a similar fashion. Other documentaries are distributed by government agencies such as the Department of Agriculture, the Bureau of Mines, etc. These organizations distribute not only pictures made on assignment by their own crews, but also films shot by outside producers



which meet certain required standards. Lastly, documentary films are distributed on a rental basis by independent companies set up solely to release films made by producers lacking distribution facilities.

*Education and training films* are, of course, made for instructional purposes and are therefore of interest to groups and individuals interested in learning about a particular subject. Such audiences consist of two main groups: students in various types of schools, and professional employees who wish to learn more about their jobs.

The purely educational film is slanted for students ranging from grammar school to college level. Many professional and trade schools also use films as training aids. Distribution of this type of film is usually a matter to be settled between the producer (or his distribution agency) and the administrative board of the school. The best manner of solicitation is for the producer to prepare a detailed brochure of the film illustrated with scenes from the action. The brochure is then sent to a selected list of schools which might be interested in the subject matter of the film. Included with the brochure is a Preview Request Card which the school is invited to fill out and mail should it wish to screen the picture.

The *training film* is produced for an organization interested in teaching specific skills to new employees or improving the efficiency of its personnel. Its audience is, therefore, selective, limited, and more-or-less guaranteed. The organization itself almost always handles its own distribution of such films.

### Releasing Your Own Films

No matter what type of film is to be distributed, there are both advantages and disadvantages for the producer doing his own releasing. On the credit side it should be said that the producer may very well make a larger percentage of profit in money from a certain picture if he handles the distribution himself—but this task may interfere with his production activity to the extent where he is actually worse off than if he had turned the distribution over to someone else.

Not only is distribution a time-consuming occupation, but it is also a highly specialized field that requires a marketing approach of a unique variety. The creative talent required to produce a film is rarely combined with the sort of business sense necessary to efficiently distribute that film. The obvious solution, of course, is for the producer to have affiliated with him a person especially skilled in the distribution phase of motion pictures.

Lacking this kind of arrangement, the producer will simply have to take time from his production activities to market the film. It is assumed, of course, that he has analyzed the potential field of distri-

bution prior to actually filming the picture, but he should also survey the situation again upon completion of the film to make sure that conditions have not changed in the meantime. Only on the basis of circumstances as they exist when the picture is completed can he make really accurate plans for distribution.

Once having undertaken such a project, he must be prepared to follow through, since the distribution of a film is a lengthy process that often extends over months and even years. If he lays the initial groundwork efficiently, he may be able to turn the bulk of the actual work over to an assistant later on.

### Releasing On a Royalty Basis

Many producers who have no definite distribution set-up, or who feel that their time is more profitably spent in the *production* of films, customarily turn their pictures over to a trustworthy distribution organization for release on a percentage or *royalty* basis. Many such reputable organizations can be found listed in a book called: "1,000 and One," which is published by Education Screen, 64 Lake Street, Chicago.

The arrangements made and the percentages involved in such deals vary widely between individual producers and distributors, so that it is impossible to state definitely what is or is not a fair percent-

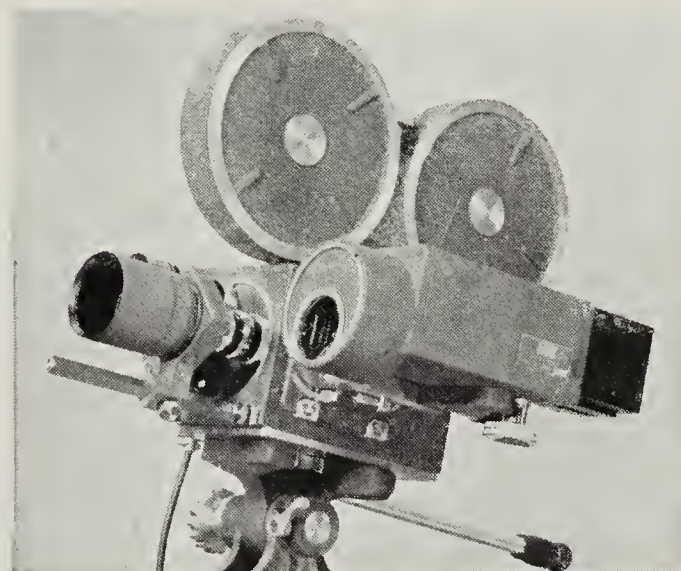
age. The producer will do well to query other producers who have made similar arrangements and find out in that manner which distributors offer the best deal. He will also want to contact a number of these distributors directly to get an idea of what kind of profitable arrangement can be made.

The usual royalty arrangement is more or less of a *lease* by means of which the distributing organization is given the exclusive or non-exclusive right to distribute a certain film for a set number of years. Such contracts usually include a sliding scale of royalties for rentals and sales of prints, as well as an option to renew the contract for an additional period following the expiration of the first term. The distribution agency may or may not agree to assume the cost of prints, but will usually assume the actual outlay for distribution (such costs to be deducted from the profits upon which royalties are based.)

There is an alternate plan which some producers use with very good results and which combines the advantages of private distribution and release on a royalty basis. The producer generally has a list of accounts which, on the basis of past experience, he knows to be more or less "sure" sales. He contacts this list immediately upon completion of the film and sets up a series of previews for these accounts.

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FOR THE PRODUCTION OF INDUSTRIAL, EDUCATIONAL AND TRAINING FILMS



Having thus captured the cream of the ready market in immediate sales, he then turns the film over to a distributor for release on a royalty basis and reaps a smaller but steady harvest over a period of time with no additional effort on his part to promote that particular film. This arrangement works very well with producers who want to make as large an im-

mediate profit as possible but do not wish to take too much time away from production activities.

#### Horizons—Present and Future

As this book goes to press, the American motion picture industry stands on the threshold of the most productive and profitable period in its history. While there is current congestion in the professional 35 mm. photoplay field due mostly to curtailed foreign release of American films, the confusion is regarded by the industry in general as being of a temporary nature, and it is felt that the adjustments now being made in studio operating procedures will result in a vastly more efficient and ultimately more prosperous American motion picture industry.

In the 16 mm. field the boom is now underway and promises to develop into a profitable avalanche. The use of motion pictures as the principle training aid during our most recent world war proved conclusively to many erstwhile skeptics that the 16 mm. sound film is a virtually unparalleled medium of entertainment, instruction and promotion. The current heavy demand for sound projectors and films concretely bears out this assertion. It would be a mistake, however, to feel that the public will accept just any sort of film. The general audience has been conditioned to the technical excellence of the Hollywood product. The average moviegoer is now aware (and often quite critical) of photography, direction, sound rendition, background music and color quality. He will expect the same high quality in the 16 mm. field as he is accustomed to seeing on his theatre screens, and as the production field becomes more competitive only those producers who can come through with a high standard of quality will survive.

Schools throughout America and most foreign countries are busily installing the latest sound projection equipment and building up their film libraries. The trend is definitely toward *visual education*. Many educational films now in use are obsolete and must be revised. Many subjects newly added to the curriculum have not yet been illustrated in terms of motion pictures.

The field is large and the demand great for interesting and accurate films of an educational nature.

In the commercial field, more and more companies are turning to the 16 mm. motion picture as the most selective and forceful method of presenting their sales messages. There is a place for the motion picture in almost every business and the commercial world is rapidly becoming educated to that fact.

Unquestionably the brightest new horizon for 16 mm. motion pictures is television. This electronic miracle is no longer a theory, but an actuality that promises to become even more popular in time than present-day radio. Television producers look to the motion picture as the hope of the television industry to maintain high standards of quality in program presentation. There will be a bulk of "live action" shows when television shifts into high gear, but many of the really finished dramatic and commercial productions will be telecast from 16 mm. films.

This will mean a demand for short, well-produced motion pictures of a fictional nature as well as variety shows and advertising shorts of one to two minutes duration to replace the present commercial "spot" announcements. It is hoped that the producers of these commercials for television will use better taste in presentation than is currently the case in radio.

The outlook for the motion picture is a healthy one. Whether the producer is an advanced amateur making pictures for the amusement of himself and his friends, or a professional turning out commercial, industrial or education films, he has every reason to expect a wider and more profitable market for his product. He owes it to himself and to his audiences to keep abreast of the latest production techniques and equipment, so that his film as it appears on the screen will be, as it was *meant* to be, an amalgam of the finest arts presented for the entertainment and enlightenment of the greatest number of people.

THE END

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## 25 YEARS AGO

### With A.S.C. and Members

- Rudolph Berquist, A.S.C., was assigned to photograph "Your Friend and Mine" for Metro.
- James Van Trees was appointed to the board of governors of A.S.C.
- Robert Kurrle had completed "All the Brothers Were Valiant" at Metro.
- Reggie Lyons was staff photographer for Jess Robbins productions.
- Gilbert Warrenton was at the New York Paramount studios photographing Alice Brady in "The Leopardess."
- Homer Scott and Ed Du Par were photographing "Little Church Around the Corner" at Warners.
- George Barnes was with director Rowland V. Lee photographing Florence Vidor in "Alice Adams."
- Andre Barlatier was filming a Leah Baird feature.
- H. F. Koenekamp was passing out cigars celebrating birth of a son.
- Floyd Jackman had just completed "Michael O'Halloran" for Gene Stratton Porter.
- George Schneiderman finished "Pawn Ticket 210," a Shirley Mason starrer.
- Harry Fowler was on location at Shaver Lake shooting "The Man from Outside," with Frank Mayo, Miriam Cooper and Stuart Holmes heading the cast.
- James Van Trees wrote an article describing experiences in photographing "The White Flower" on location in Hawaii.
- Charles Stumar had just returned from making a picture in Berlin, and described production conditions in Austria and Germany in an extended article.

### Eastman Kodak Plastics Lab

Special laboratory to intensify development of plastic parts for cameras, projectors and other photographic apparatus has been opened at the camera works of Eastman Kodak, where research work and experimental studies will be conducted. Garson Meyer, chief chemist of the camera works, will supervise the new department, with Gerard Delaire functioning as engineer-in-charge of the laboratory.

Although plastics are now widely utilized in making cameras, carrying cases and many other pieces of Kodak photographic equipment, and the actual, large scale production of same is done by several custom molding concerns; the plastics laboratory will enable Kodak to more quickly and scientifically solve many research and engineering problems to accelerate adoption of plastics more widely.

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## RECORD SALES IN 1947 FOR BELL & HOWELL

Record peace-time high of more than \$18,000,000 in net sales was achieved during 1947 by Bell & Howell Company. This fact was disclosed by president J. H. McNabb at initial 1948 meeting of the company's board of directors in Chicago two weeks ago.

At the present time, the company anticipates continuance of the heavy demand for photographic products, and president McNabb indicated that production and sales budgets approved for the coming year would be the highest in the organization's history, further stating that the company was continuing its long-range expansion program of adding to its productive plants and facilities.

Most important factor accounting for the increased sales of B&H during 1947 was the successful overcoming of the 1946 shortage of materials and parts for cameras, projectors and visual education equipment; together with the exceptionally high demand for cameras and projectors by the rapidly-expanding 16 and eight mm. fields, especially in the home movie division. Nearly 50% of the company's sales for 1947 centered in the amateur movie field. Recognizing this impor-

tant segment of the market, B&H during the past year introduced a new 8 mm. magazine loading camera; a new 8 mm. projector model; and a new 16 mm. camera for the advanced amateur.

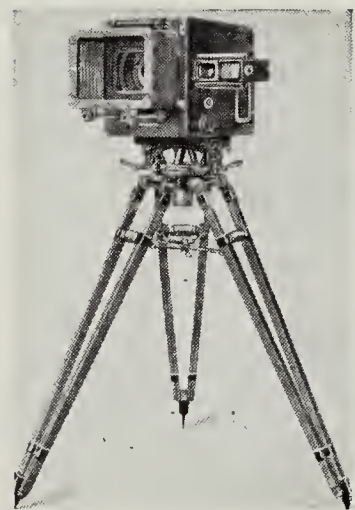
Also occupying an important place in the company's current manufacturing schedules are 16 mm. sound projectors for use in schools, churches and industry, for visual education and entertainment.

Bell & Howell Company pioneered in the manufacture of professional 35 mm. equipment, and—while it still is one of the largest suppliers to professional stu-

dios and laboratories throughout the world—sales to this market were only 10% of the 1947 gross. But the precision necessary in manufacturing cameras and other equipment for professional use, has been carefully followed in the production of 16 and 8 mm. equipment.

President McNabb disclosed that Bell & Howell Company earnings for the first nine months of 1947 were estimated at \$1,755,742, after Federal Income taxes, equivalent to \$3.60 per share on common stock. Final audited figures for entire year of 1947 will not be available until release of company's annual report to stockholders in April.

## S.O.S. Specials of the Month



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## ONLY TWENTY-ONE YEARS AGO

This still brings back recollections of the days of hand-cranked cameras in the pre-sound era of 1927. On location at West Point for "Dress Parade" were: (left to right) Peverell Marley, A.S.C., director Donald Crisp; Gabe McBride, and Walter Streng, A.S.C.

The hand-cranked cameras used for the production, shown in background, were: (left to right) Mitchell, Bell & Howell and Pathe.



## DeVry Introduces Lightweight 16 mm. Projector

DeVry is introducing a lightweight and low-priced 16 mm. sound-film projector under name of the Bantam. Company states the machine is entirely of post-war design, and incorporates projection mechanism, soundhead, amplifier, speaker and screen in a small compact case weighing less than 31 pounds.

Operational features of the new DeVry model include:

Brilliant 750-1000 watt illumination. Light output exceeding 200 lumens, more than adequate for showing large size pictures in auditoriums.

Condenser and fast projection lens are coated with a microscopically thin layer of magnesium fluoride to reduce internal reflection and increase light transmission.

Another feature of the new DeVry "Bantam" is the efficient sound filtering system, a system that eliminates perceptible flutter and wows and makes for remarkably lifelike sound reproduction. Spring dampened sound filtering rollers acting in perfect conjunction with a statically and dynamically balanced flywheel, assures constant speed of the film at the sound scanning point by filtering out the intermittent action imparted to the film at the film gate, the flutter caused by the action of the sprocket teeth, and other annoying disturbances caused by bad splices, curled or mutilated film.

One of the many DeVry advantages retained in the new "Bantam" is the Automatic Loop Setter. This device makes possible the resetting of the lower loop without damage to the film when loop is lost due to faulty film or incorrect threading. A flip of a lever automatically resets the correct loop and the show goes right on—uninterrupted.

Other operational features include—sound and silent projection, 2000-ft. film capacity, all controls on one accessible panel, fast, safe motor rewinding of film without changing reels, cool operation through a ventilating system coupled with a motor driven fan, one point lubrication, sure acting tilting device, dependable

drive motor, positive take-up of all size reels, side tension control at aperture, and quiet operation on either A.C. or D.C. A DeVry guarantee certificate accompanies each projector.

The speaker provided as part of the new single case DeVry "Bantam" is a 6-inch Alnico 5, permanent magnet type. It is usable in any one of three ways with ideal results—attached to projector in carrying position, open with speaker grill facing audience, or at the screen, for which a 25-ft. cable is furnished.

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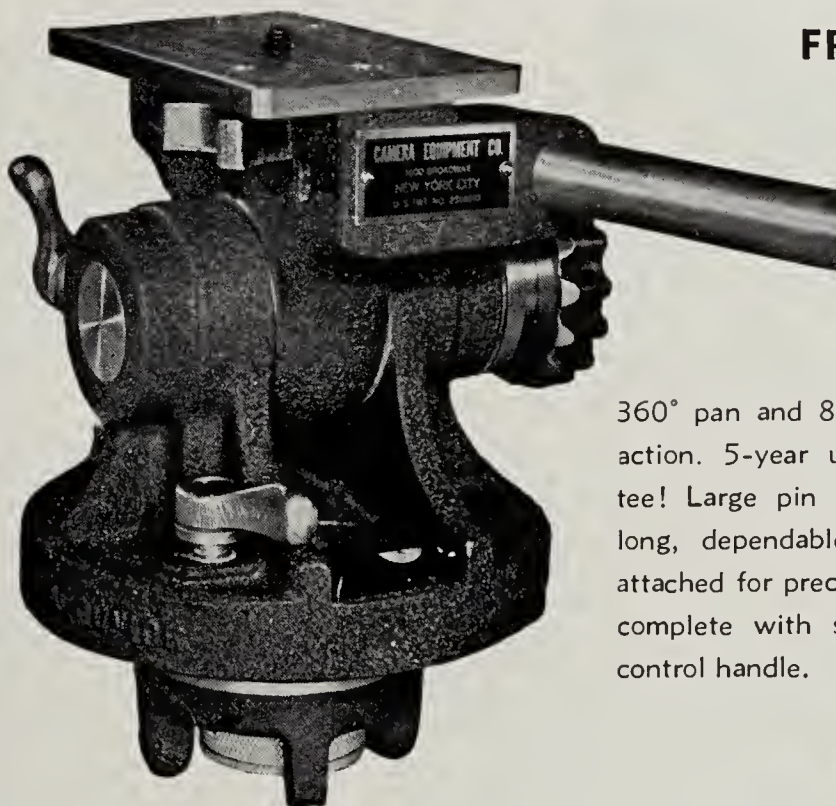
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## Set Lighting Economy

(Continued From Page 52)

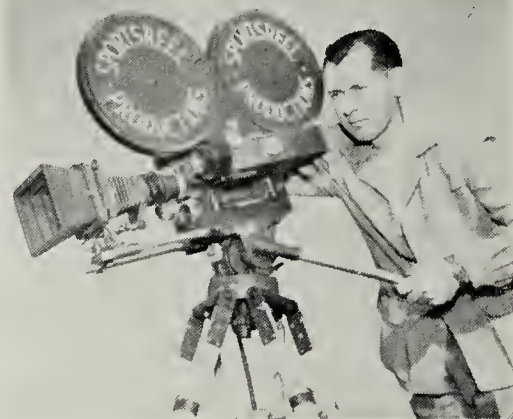
teristic for each unit it was possible to maintain stable operating conditions.

Some projection arc lamps in theatres are operated on low voltages from individual generators or rectifiers with very little grid ballast. Rotating high intensity lamps similar to the Type 90 or Type 170 burners are also operated, two or more lamps, from a single generator of as low as 80 volts output.

The 115-120 volts used in present motion picture studio practice is not necessary for stable carbon arc operation. With proper grid ballast adjustment and certain changes in feeding mechanisms all rotating high intensity carbon arc lamps in the studios could be operated from power sources of much lower voltages, or approximately 20 percent to 25 percent grid ballast voltage drop. However, the problems involved in the changing of studio power supply are obvious.

We realize that, when compared to the other strictly mechanical costs, the set lighting costs for a motion picture of great production value are considerable; *we also realize that it is light which makes this production value possible.* We do not believe that economies which could reduce these mechanical costs are justified if they actually increase the total production costs, or if they affect the final quality of the picture.

Our approach to the question of economies in the lighting of large sets has been in the development of more powerful single sources, such as the M-R Type 450 "Brute" lamp. This lamp delivers twice the light of the Type 170 and with certain beam spreads the gain is threefold. Some directors of photography have found that on large sets they are able to replace several Type 170 lamps by the use of one Type 450. Economies of this nature not only reduce the overall cost of production, but give the directors of photography better tools to work with.



Where there's action—plenty of action, there is Walter D. Porep of Sportsreel Productions with his new Mitchell 16 mm. Professional. Specializing in sports cinematography, Porep was engaged by the University of Michigan to film the Rose Bowl game. A 1000-ft. magazine on the Mitchell made it possible for him to shoot an entire half of the game without reloading.

## Art Direction

(Continued From Page 49)

tographed in the interior of Mexico with actual buildings being used as the settings. Part of "To the Victor" was filmed on the Normandy beach and in the streets of Paris. However, as effective as this type of filming is, it has the drawbacks of expensive transportation, the difficulty of securing accommodations for the studio personnel, and always the problem of curious spectators who can't resist watching a movie in the making.

According to Smith the majority of Hollywood films will continue to be made in studio sound stages and on exterior sets built at the many accessible, scenically beautiful, and weather perfect locations in and around Southern California.

## Sheppard Retires from Kodak

Dr. Samuel E. Sheppard, widely known for his research on the sensitivity of photographic materials, has retired after 35 years with Kodak Research Laboratories. His research work and development on gelatin is of great importance to present-day photographic quality.

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## CANDIDATES FOR BEST CINEMATOGRAPHY OF 1947

As a result of the voting on the preliminary ballot, the following six black-and-white and six color productions are under current consideration by the Academy of Motion Picture Arts and Sciences for nomination as the best achievements in cinematography during 1947. These productions are currently being shown in Hollywood, and the two productions receiving highest votes in specific classifications, will go on the final ballot for selection.

### COLOR PRODUCTIONS

"Black Narcissus," Jack Cardiff, A.S.C., Director of Photography. Produced by Michael Powell and Emeric Pressburger in England and distributed in the United States by J. Arthur Rank through Universal-International.

"Captain From Castile," Charles Clarke, A.S.C., and Arthur Arling, A.S.C., Directors of Photography. Produced by Twentieth Century-Fox.

"Forever Amber," Leon Shamroy, A.S.C., Director of Photography. Produced by Twentieth Century-Fox.

"Life With Father," Peverell Marley, A.S.C., and William V. Skall, A.S.C., Directors of Photography. Produced by Warners.

"Mother Wore Tights," Harry Jackson, A.S.C., Director of Photography. Produced by Twentieth Century-Fox.

"Tycoon," Harry Wild, A.S.C., Director of Photography, Produced by RKO.

### BLACK-AND-WHITE PRODUCTIONS

"The Bishop's Wife," Gregg Toland, A.S.C., Director of Photography. Produced by Samuel Goldwyn for RKO release.

"The Foxes of Harrow," Joseph La Shelle, A.S.C., Director of Photography. Produced by Twentieth Century-Fox.

"Gentlemen's Agreement," Arthur Miller, A.S.C., Director of Photography. Produced by Twentieth Century-Fox.

"Great Expectations," Guy Green, Director of Photography. Produced in England by J. Arthur Rank and released in the United States by Universal-International.

"The Ghost and Mrs. Muir," Charles Lang, jr., A.S.C., Director of Photography. Produced by Twentieth Century-Fox.

"Green Dolphin Street," George Folsey, A.S.C., Director of Photography. Produced by Metro-Goldwyn-Mayer.

## HUMANE SOCIETY RECOMMENDS ANIMAL FILMS

**S**UGGESTION that 8 and 16 mm. professional and amateur movie makers consider shooting more film subjects of pets and domestic animals, is advanced by Warren W. McSpadden of American Society for the Prevention of Cruelty to Animals.

In pointing out that most amateurs concentrate on shooting scenery, he states that personal film collections can be varied with the inclusion of several reels of animals. And, McSpadden continues, the film making of pets has hardly been covered by amateur movie makers, and there are many subjects that can be made that will test the film-making ingenuity of the cameramen.

Several years ago, Kenneth Space made a 400 foot black-and-white silent reel of a kitten, which was widely acclaimed in the educational world, and he sold many prints of the subject for a good profit. In another case, two youthful movie enthusiasts prepared a film of a dog's day in 16 mm., and the idea and picture proved

so novel and packed with human interest that the famous shorts producer Pete Smith bought it to remake as a theatrical short.

Amateurs who are continually seeking interesting subjects for their movie making might consider the proven fact that entertainment features with dogs and horses in prominent roles, have always proven successful box office for the film studios. During the past few years, the Lassie (dog) and Flicka (horse) productions have been surprisingly successful with theatre audiences. And previously, few can forget Rin Tin Tin, Strongheart, and Rex, King of Wild Horses. Mack Sennett, famous comedy producer, had the popular dog Teddie in a series of his two reelers; while Hal Roach always prominently displayed a dog as companion to the kids in Our Gang comedies.

Ken Murray, astute showman whose Blackouts variety show is still running in Hollywood after six years, recently added a trained bird act to his program. He be-

came so enthusiastic about their uncanny abilities to act and take training that he made a feature picture with only the birds as players. It will shortly be released in regular theatres by Republic.

In addition to pet subjects for which a story outline or script is prepared by amateurs for unusual filming and potential strong entries in contests; McSpadden points out a number of basic ideas for films which might be sold to commercial organizations for advertising or promotional purposes.

His suggestions include subjects on rabbits, pigeons, canary, and guinea pigs; detailing the breeds, raising, feeding, care, housing, etc., of each type of pet.

Of course, there are innumerable ideas for film subjects on dogs and cats—most easily discernible being training, cute antics, etc. "Grooming the Dog" may be a good basis, McSpadden suggests, for a subject of 400 feet of 16 mm. kodachrome. It allows for many interesting sequences such as proper bathing, combing, brushing, clipping, plucking, elimination of fleas and ticks, and best treatment of mange. A cat could easily be the subject if one is more readily available.

In making such pet pictures, McSpadden stresses the point that the film maker does not necessarily have to be well-versed in the particular subject. There are a number of good reference books available, and the ASPCA publishes booklets which are available. In addition, local breeders, trainers or fanciers of various pets would be happy to cooperate in the filming. One most important point in starting production of a handling or training film on any type of pets is to make certain that the subject matter is correct in procedure at all times.

The field of pets is wide open for those movie enthusiasts who want to produce unusual and interesting pictures for their own collections, with the possibilities present of selling the subject as an entity for a good profit, or prints to cover the initial cost of production. McSpadden recommends that—for those who would make pet films with an eye on sale of subjects to commercial firms—the pictures should be shot at 24 frames per second; as practically all of the film libraries and distributors are not in the market for silent subjects shot at 16 frames per second. In originally shooting at 24 frames, sound can be recorded for the subjects later by the library or purchaser.

## Moulin General Manager Of Eastman Kodak Stores

Clyde N. Moulin has been appointed general manager of Eastman Kodak Stores, and will headquarter at Rochester. With Kodak since 1905, Moulin was recently manager of the company's Chicago stores and district manager of the Great Lakes and Central divisions.



## Photographic Highlights

(Continued From Page 45)

tory color pictures were still being made in this country and abroad by two-color processes.

A historical review of the development of the sound motion picture was published by E. I. Sponable (*J. Soc. Mot. Pict. Eng.* 48: 275, April 1947).

**Standardization.** A total of 79 standards were approved for photography in recent years as a result of the work of Sectional Committee Z38, Photography, of the American Standards Association. Bulletin Z38/359 of the ASA summarized the status of the approved and proposed standards in this field as of November 10, 1947. A wide variety of subjects were covered including: Method for Determining Speed and Exposure Index; Sensitometry of Photographic Papers; Method for Determining Resolving Power of Lenses for Projectors for Slide film. The Sectional Committee on Motion Pictures, Z22 of the ASA also reported progress in three papers published in the *Journal of the Society of Motion Picture Engineers* in February, August and December.

A series of papers on lens calibration were published by a sub-committee of the SMPE headed by R. Kingslake. Besides recommending a standard procedure for measuring the photographic speed of a lens, this group will also attempt to standardize a new system of speed marking to replace the f-number markings that are the only indication of lens speed (*J. Soc. Mot. Pict. Eng.* 49: 95, August 1947). K. Pestrecov presented data on the resolving power of lenses (*PSA Journal* 13: 155, March 1947). J. W. McFarlane discussed the subject of lens flare and its effect on picture quality (*ibid* 13: 344, June 1947). M. Herzberger proposed a new method for obtaining data on the light distribution in an optical image and showed that when this information is plotted, the results are very similar to photographs of the image of a point light source (*J. Opt. Soc. Amer.* 37: 485, June 1947).

New instrumental techniques for studying the problem of photographic granularity and graininess as well as the characteristics of the visual system were discussed by L. A. Jones and G. C. Higgins (*ibid.* 37: 217, April 1947). The dimensional stability and physical properties of safety Aerographic film used for topographic mapping work were investigated by J. M. Calhoun (*Photogrammetric Eng.* 13: 163, June 1947). Relationships between sprocket pitch, film pitch, and film wear of 16-mm film were studied by C. F. Vilbrandt as an aid for the extension of projection life of such film (*J. Soc. Mot. Pict. Eng.* 48: 521, June 1947). The production of very fine scales or grati-

cules on optical instruments was described in papers by G. W. W. Stevens and by A. J. Bull (*Phot. J.—London* 87B: 34 and 43, March-April 1947).

**Photographic Manufacture.** Increased demand for photographic materials and equipment from both amateur and professional users, especially the latter, resulted in a step-up in production to an all-time peak for any peace time year. Besides the new color materials previously noted, there were introduced a few new and improved papers. Velite, a contact printing paper for amateur use, could be handled for two minutes without fogging under ordinary room lighting of a 60-watt lamp four feet away; a Number 1 Photoflood lamp gave good exposures in a few seconds. Kodagraph Autopositive, a paper of extreme contrast, gave positive photocopies from positive originals upon exposure to yellow light and with normal development. Other new paper products were *Illustrator's Azo* (Kodak), and *Portraya* and *Onyx* (Haloid). Several improved papers were reinstated (sometimes under new names) after being discontinued during the war, as follows: *Athena* and *Platino* (Kodak), *Indiatone* (Ansco), and *Veltura* (duPont-Defender). The name Kodagraph defined a complete line of films, papers and products for industrial photography. Special emulsions on plates for the recording of tracks by nuclear particles were sold by Ilford, Ltd. and by Eastman Kodak Company.

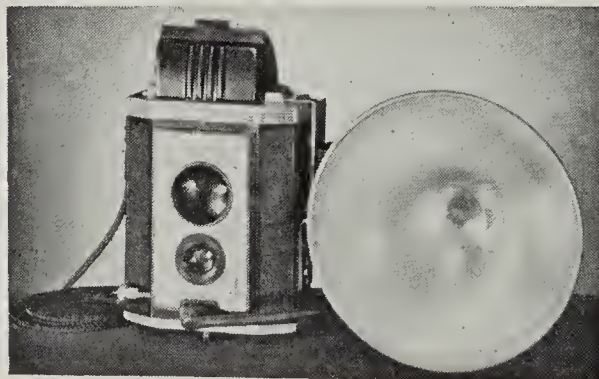
Many amateur and professional cameras were supplied with built-in photoflash synchronization (Fig. 6). Twin-lens reflex cameras continued to retain their popularity as represented by the new Ansco Automatic Reflex with an f/3.5, 83-mm lens and automatic film transport mechanism, the *Argoflex*, the *Ciro-flex*, the *Kodak Reflex* and other similar type cameras. The *Spartus Press Flash* camera incorporated a built-in flash reflector and the new *Kodak Duo-flex* had a large horizontal view finder conveniently located on the top of the camera (Fig. 6). A new 35-mm miniature camera called the *Kardon* and patterned after the German *Leica* was built by the Premier Instrument Corporation. *Graflex* announced its new press cameras known as *Pacemakers*. The *Portramatic* camera used roll film, 70-mm

wide, and had electrical shutter control and automatic winding. A special automatic camera designed by R. Clark and using an electronic flash built by H. E. Edgerton was employed at Leland Memorial Hospital, Riverdale, Maryland, for photorecords of new-born infants (*Rochester Times-Union* 30: 2, October 20, 1947). A few details of the new Army Signal Corps camera using 70-mm film were announced. Known experimentally as PH-518PF, the automatic mechanism of this camera snaps the picture, winds the film, and cocks the shutter. The construction and design were said to be so rugged that the camera can be used effectively even after immersion in water, exposure to tropical heat or to arctic cold (*ibid* 30: 17, November 24, 1947).

European camera factories were in operation again as indicated by importation of cameras including the following: *Leica III*, the *Robot II*, the *Rolleiflex*, the *Zeiss Ikonta 35-mm* camera, and a French camera known as the *Lynx II*.

Improved and new models of exposure meters included the *General Electric PR-I*, the *Norwood Director*, and the *Weston Master*. Better projection equipment was available for the small color slide photographer as represented by the following projectors: *Bausch and Lomb Miniature Slide Projector*, the *Spencer MK Delineascope*, the *GoldE Master Projector*, the *Kodaslide Master Model* and the *P.R.C. Automatic Slide Projector*. Several new items of amateur and semi-professional cine equipment were introduced as follows: the *Bell and Howell 8-mm Magazine Camera*; *Prefex Magazine Double 8* camera; *Revere-70 Magazine* camera; *Ampro-8 Projector*; *DeJur "1000" 8-mm* projector; *Keystone 8-mm Model K108* projector; *Kodascope Eight-90*; *RCA-400 16-mm* sound projector; and the *Victor Animatograph Lite-Weight 16-mm* sound projector. The *DeVry Corporation* built a professional 16-mm sound projector in cooperation with the Army Signal Corps. The *Gaumont-Kalee Model 21* sound projector for 35-mm film made by *Kershaw and Sons*, Leeds, England was a completely enclosed standard theater projector.

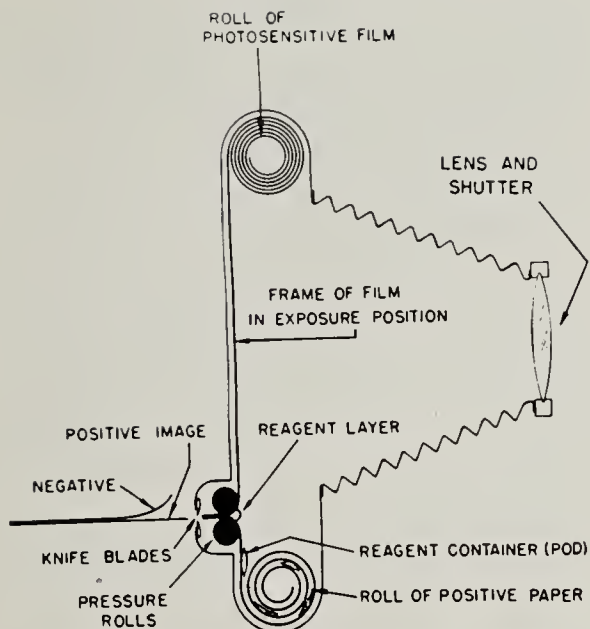
**The Photographic Process.** One of the most interesting processes described during the year was the one-step process of E. H. Land which produces a finished positive print in the camera about one minute after making the exposure. In one form of this process, the camera contains a roll of negative material and a roll of specially treated paper, on which is attached at intervals, a small sealed envelope or "pod" containing a viscous mixture capable of developing the negative and forming a positive image at the same time (Fig. 7). After normal exposure of the negative, it is wound in close contact with the paper through pressure rollers which break the pod and spread the chemicals



Amateur reflex camera with built-in synchronized flash.

Photo: Eastman Kodak.





Above: Diagram of "One Step" camera invented by E. H. Land. Below: Land strips the positive print from the negative.  
Photos by Polaroid Corp. and Acme.

uniformly between the two layers. As the negative material develops, the unexposed grains are dissolved and reprecipitated as a positive silver image in the layer next to the negative. After one minute the paper containing the positive image is stripped from the negative. (J. Opt. Soc. Amer. 37: 61, February 1947) (Fig. 8). Other one-step, image transfer processes disclosed in the patent literature but not known to have been publicly demonstrated were described by Varden (PSA Journal 13: 551, September 1947).

T. H. James summarized recent hypotheses on the mechanism of photographic development (J. Chem. Education 23: 595, December 1946). Development effects resulting from the interaction of adjacent images were discussed by R. N. Wolfe and R. S. Barrows (PSA Journal 13: 554, September 1947). The nature, cause, and methods of prevention of sulfide stain, a common defect which is encountered with used developers containing extremely small quantities of sulfide, was discussed by R. W. Henn and J. I. Crabtree (ibid. 13: 752, November 1947).

A scheme for the rapid mixing of de-

velopers as used by the Batelle Institute, Columbia, Ohio, consists of using four stock solutions of developer ingredients from which it is possible to prepare any one of ten developers with the aid of two charts (Amer. Phot. 41s 37, February 1947). A mathematical method of resolving exhaustion-replenishment problems in connection with the use of photographic solutions by large finishing plants was described by R. W. Henn and M. Herzberger (PSA Journal 13: 494, August 1947).

*World Center of Photography.* A world center for the display and demonstration of the art and science of photography will be established in Rochester, N.Y. under the name George Eastman House, Incorporated, according to an announcement made in June. It will be located in Mr. Eastman's former home, at 900 East Avenue.

*Bibliography.* The following new magazines appeared: *Foto* (Hengelo, Netherlands); *Ferrania* (Milan, Italy); *Miniature Camera World* (London); *Photography* (published quarterly, Chicago).

New books were as follows:

*Better Photography*, L. Loeb, Philosophical Library, New York.

*Speedlight, Construction and Use*, A. Palme, American Photographic Publishing Company, Boston.

*Commercial Photography*, V. Keppler, Ziff-Davis Publishing Company, Chicago.

*Lighting Your Pictures*, D. Mohler, Ziff-Davis Publishing Company, Chicago.

*Pictorial Lighting*, W. Mortenson, Camera Craft Publishing Co., San Francisco.

*Photo-Flash in Practice*, G. Gilbert, Focal Press, Ltd., London.

*Masterpieces of Bird Photography*, E. Hosking, Collins, London.

*Fotografia de los Colores*, A. Delconte, Correo Fotografico Sudamerico, Buenos Aires.

*Pictorial Continuity*, A. L. Gaskill and D. A. Englander, Duell, Sloan and Pierce, New York.

*Working for the Films*, edited by O. Blakeston, Focal Press, London.

*Histoire de la photographie*, R. Lecuyer, Baschet at cie, Paris.

## Tri-City Cinema

January 15th meeting of Tri-City Cinema Club (Davenport, Iowa; Rock Island and Moline, Ill.) was held in the Moline public library. Program comprised "Sky Line Adventure," by Marvin Russell of Rock Island; "Vacationing at Madeline Island in Wisconsin," by Raymond Schmidt of Davenport; and a group of colored slides by Joe Van Hoey of Moline.

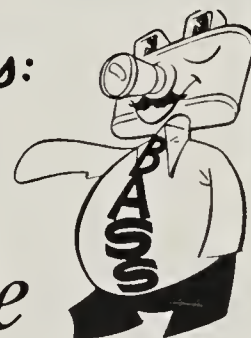
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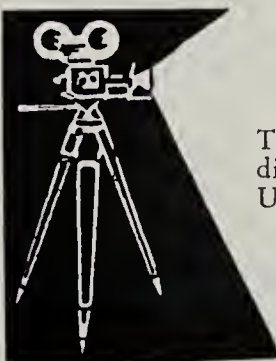
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# Current Assignments of A.S.C. Members

MEMBERS of the American Society of Cinematographers were engaged as Directors of Photography in the Hollywood studios during January as follows:

## Columbia

- William Snyder, "The Loves of Carmen" (Technicolor), with Rita Hayworth, Glenn Ford, Ron Randell, Victor Jory.
- Burnett Guffey, "The Gallant Blade" (Cinecolor), with Larry Parks, Marguerite Chapman, Victor Jory, George Macready.
- Burnett Guffey, "Let's Fall in Love," with Dorothy Lamour, Jeffrey Lynn, Janis Carter, Adele Jergens.

## Eagle-Lion

- L. W. O'Connell, "Assigned to Danger," with Gene Raymond, Noreen Nash, Mary Meade, Martin Kosleck.
- John Alton, "The Spiritualist," with Turhan Bey, Lynn Bari, Cathy O'Donnell, Richard Carlson.

## Independent

- Roy Hunt, "Mr. Joseph Young of Africa" (Arko Prod.), with Ben Johnson, Robert Armstrong, Regis Toomey, Terry Moore, Frank McHugh, Denis Green.
- Clyde DeVinna, "The Avenger" (UPA Films), with Roger de la Rosa, Ralph Morgan, Sigrid Gurie, Duncan Renaldo,

David Leonard, Trevor Bardette, Tim Huntley, Jr.

- Mack Stengler, "The Argyle Secrets" (Eronel Prods.), with William Gargan, Marjorie Lord, Ralph Byrd, Jonathan Hale.
- Jack Greenhalgh, "The Easy Way" (Sig Neufeld Prod.), with Hugh Beaumont, Frances Rafferty, Harlin Warde, Don Harvey, Tom Lane, Caroline Dome.
- Harry Wild, "The Pitfall" (Regal Films), with Dick Powell, Elizabeth Scott, Jane Wyatt.

## Metro-Goldwyn-Mayer

- Harry Stradling, "Easter Parade" (Technicolor), with Fred Astaire, Judy Garland, Peter Lawford, Ann Miller.
- Robert Surtees, "A Date With Judy" (Technicolor), with Wallace Beery, Jane Powell, Elizabeth Taylor, Carmen Miranda, Xavier Cugat, Robert Stack.
- Joseph Ruttenberg, "Julia Misbehaves," with Greer Garson, Walter Pidgeon, Cesar Romero, Mary Boland, Dame May Whitty, Reginald Owen.
- Ray June, "A Southern Yankee," with Red Skelton, Brian Donlevy, Arlene Dahl.

## Monogram

- Marcel LePicard, "Jinx Money," with Leo Gorcey, Huntz Hall, Gabriel Dell, Billy Benedict, Betty Caldwell, Wanda McKay.
- Harry Neumann, "Melody Range," with Jimmy Wakely, "Cannonball" Taylor, Virginia Belmont.
- William Sickner, "Kilroy On Deck," with Jackie Cooper, Jackie Coogan, Robin Chandler, Ralph Sanford, Charles LaTorre, Curt Bois.

## Paramount

- Leo Tover, "Sealed Verdict," with Ray Milland, Florence Marly, Broderick Crawford, John Ridgely, June Jeffrey, Ludwig Donath, Celia Lovsky, Norbert Schillar, Dan Tobin, Paul Lees.
- Charles Lang, "Foreign Affair," with Jean Arthur, Marlene Dietrich, John Lund, Millard Mitchell.
- Sol Polito, "Sorry, Wrong Number" (Hal Wallis Prod.), with Barbara Stanwyck, Burt Lancaster, Ann Richards.
- Daniel Fapp, "Abigail, Dear Heart," with Claude Rains, Macdonald Carey, Wanda Hendric, Andrea King, Henry Hull.

## RKO

- Robert deGrasse, "The Window," with Barbara Hale, Arthur Kennedy, Bobby Driscoll, Paul Stewart, Ruth Roman.

## Twentieth Century-Fox

- Arthur Miller, "Walls of Jericho," with Linda Darnell, Cornel Wilde, Anne Baxter, Kirk Douglas, Ann Dvorak, Marjorie Rambeau, Coleen Townsend, Griff Barnett, Barton MacLane, William Tracy.
- Charles Clarke, "The Iron Curtain," with Dana Andrews, Gene Tierney, June Havoc, Lee J. Cobb, Nicholas Joy, Fred-eric Tozere, Dennis Hoey.
- Joseph MacDonald, "Street With No Name," with Mark Stevens, Barbara Lawrence, Lloyd Nolan, Richard Widmark, Ed Begley, Walter Greaza.
- Harry Jackson, "Apartment for Peggy," with Jeanne Crain, William Holden, Edmund Gwenn, Randy Stuart, Gene Nelson.

## Universal-International

- William Mellor, "Man-Eaters of Kumaon" (Monty Shaff Prod.), with Sabu, Wendell Corey, Joanne Page, Morris Carnovsky.
- Russell Metty, "Mr. Peabody and the Mermaid," with William Powell, Ann Blyth, Irene Hervey, Andrea King, Millard Mitchell, Hugh French.
- Hal Mohr, "The Judge's Wife," with Frederick March, Edmond O'Brien, Florence Eldridge, Geraldine Brooks, Stanley Ridges.

## Warners

- Ernest Haller, "Winter Meeting," with Bette Davis, James Davis, Janis Paige, John Hoyt, Florence Bates, Walter Baldwin.
- Woody Bredell, "Don Juan" (Technicolor), with Errol Flynn, Viveca Lindfors, Robert Douglas, Romney Brent, Alan Hale, Jerry Austin, Robert Warwick, Joy Page, Helen Westcott, Mary Stuart.
- Karl Freund, "Key Largo," with Humphrey Bogart, Edward G. Robinson, Lauren Bacall, Lionel Barrymore, Claire Trevor, Thomas Gomez, Dan Seymour, Harry Lewis, John Rodney.
- Charles Boyle, "Rope" (Transatlantic Pictures) (Technicolor), with James Stewart, John Dall, Farley Granger, Joan Chandler, Constance Collier, Edith Evanson, Richard Crane.
- Peverell Marley, "John Loves Mary," with Ronald Reagan, Jack Carson, Wayne Morris, Patricia Neal, Edward Arnold, Ernest Cossart.
- Carl Guthrie, "The Fighting Terror," with Wayne Morris, Lois Maxwell, Gordon MacRae, Mary Stuart, Jimmy Ames.



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# NEW BOOKS OF INTEREST

## FILMS IN BUSINESS AND INDUSTRY

Henry Clay Gipson authors what must be recognized as the most informative work of its kind in "Films in Business and Industry." It will be a constant reference guide to executives, sales officials, advertising agencies, and all others who have the responsibility of passing on the production of promotional and training films for industrial concerns.

Gipson presents his facts in a reportorial manner, minimizing his own personal opinions or ideas. As one long experienced in production of films for industry, his presentation must command attention. Currently, he is president of Filmfax Productions, and was formerly production director for Films, Inc.

In a compact book of nearly 300 pages, Gipson details the whys and wherefores of industrial, sales and promotional films—movies, slidefilms, cartoons—and the proper approach in production of each kind. He covers every step in production from selection of a producer, through the scripting, production, editing and sound stages, in non-technical language that can be easily understood by the layman. For those connected directly and indirectly with the production of non-theatrical films, the book will be a most handy and valuable reference guide. Published by MCGRAW-HILL BOOK CO., New York. Price \$4.00.

## MAGNETIC RECORDING

Numerous requests for copies of the Journal of the Society of Motion Picture Engineers of January 1947, which contained six articles on magnetic sound recording and developments, resulted in issuance of a reprint booklet by the SMPE. Papers on the subject, with illustrations, include: "Recent Developments in the Field of Magnetic Recording," by S. J.

Begun; "Magnetic Sound for Motion Pictures," by M. Camras; "A Magnetic Sound Recorder of Advanced Design," by R. J. Tinkham and J. S. Boyers; "Magnetic Sound Recording on Coated Paper Tape," by H. A. Howell; "Magnetic Recording for Motion Picture Studios," by W. C. Miller; and "Discussions of Magnetic Recording," by the Research Council Basic Sound Committee. Published by SOCIETY OF MOTION PICTURE ENGINEERS, 342 Madison Ave., New York 17, N. Y. Price, 75 cents.

## CAMERA DIGEST

"Camera Digest" is a very complete compilation of editorial material and illustrations on cameras and related accessories; both still and movie. Major portion of the 113 pages is devoted to still photography; while the less than 20 pages in back of the book covers the current models of 8 and 16 mm. cameras, most brands being illustrated. The book has limited appeal for movie makers, as it concentrates more on the field of still photography. PAUL RICHMOND & CO., Chicago, Ill., are the publishers. Price, \$1.50.

## GRIERSON ON DOCUMENTARY

John Grierson is internationally known as one of the pioneers and leaders in the production of documentary films, especially as head of the Canadian Film Board during the war years when he directed the production of many important propaganda and educational films for both the Dominion and the Allied countries. His importance in the field of documentary films cannot be discounted.

In "Grierson on Documentary," he minutely analyzes many significant entertainment films from his own personal viewpoint—going back to the silent features of the '20s in early chapters—and then expounding his theories on the proper approach for documentary and educational films of the future in extended discourses. It all sums up to the personal viewpoints of the author, rather than conveying basic and informative material for those engaged in documentary production. HARCOURT, BRACE AND COMPANY, New York, are the publishers. Price \$3.75.

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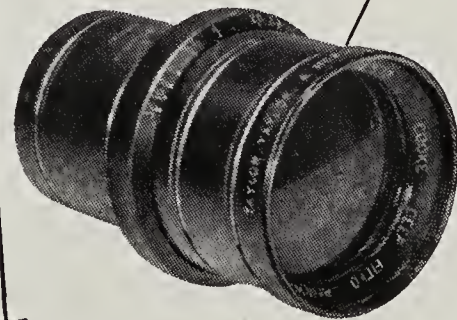
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*In This Issue*

TRUCOLOR PROCESS

MARCH 1948





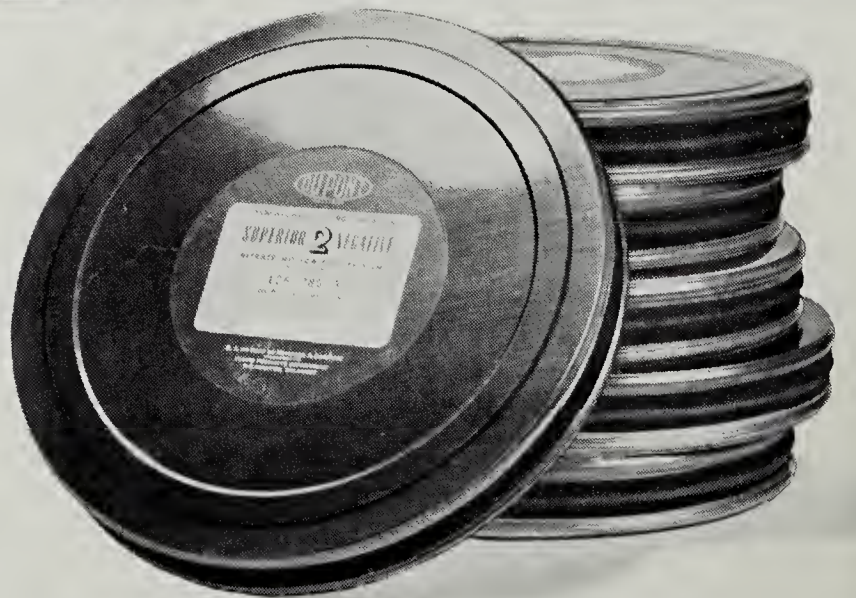
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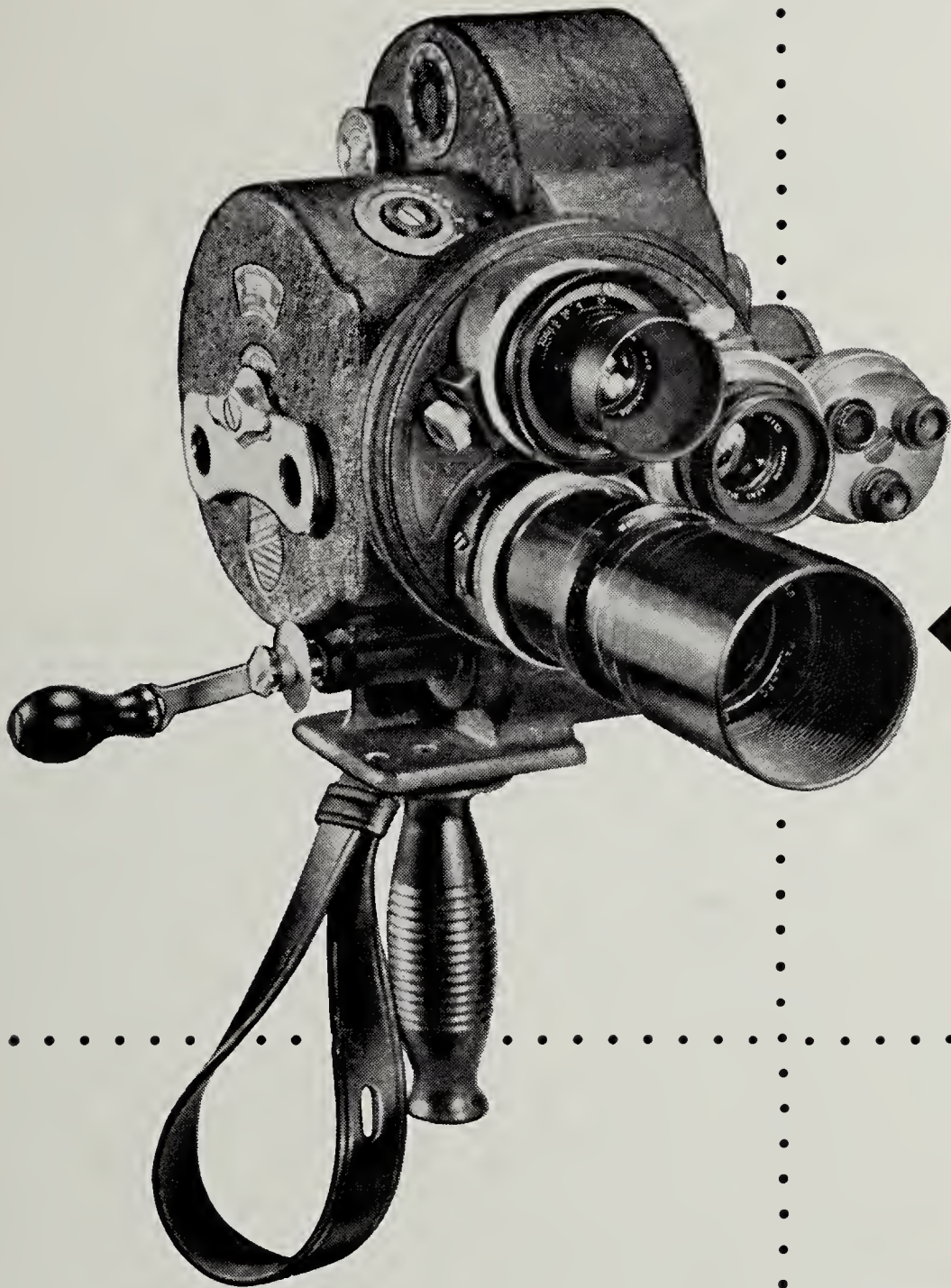


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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 29

MARCH, 1948

NO. 3

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ON THE FRONT COVER—Director of Photography Joseph Walker, A. S. C. (extreme left foreground) photographs a scene of Rosalind Russell and Leo Genn for the Independent Artists' production, "The Velvet Touch." Walker's electronic flash device is hooked up between motion picture and still cameras to allow the simultaneous making of a still shot during action. Electronic flash lamp is directly in center above head of the still photographer. See article on page 85.

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# THE TRUCOLOR PROCESS

By ROE FLEET

**W**HEN the practicability of a 35 mm. color process is advanced, there are numerous vitally important factors to be taken into consideration. Of the hundreds of so-called color processes announced and projected during the past three decades with resultant losses of millions to public and private investors, only a handful have survived to provide commercially successful color film prints.

Processing of a color film method requires unlimited combined resources in capital, engineering and chemical research and direction, equipment, and trained technicians. The negative must be suitable exposed, but more important—the particular system must be capable of turning out uniform release prints without too great an expense in the laboratory and preventing excessive loss of stock in the printing procedure.

Consolidated Film Industries division of Republic Pictures Corporation has been processing a two color system for many years under the trade name of Magnacolor. By this method, which has generally been accepted for two-color systems, a double-coated positive film is exposed in either side through the appropriate component of a bi-pack negative, and developed to a low gamma in an ordinary black-and-white developing solution. This step is followed by fixation in a combined hardening and fixing bath. Next, the positive film is floated on an iodine solution so that the silver image in the emulsion facing downward is converted to transparent silver iodide.

After various washings and clearing baths, the entire film is submerged in a bath of basic dyes which have the property of mordanting to the silver iodide image only. Further prolonged washings and clearings follow, after which the film is submerged in an iron toning solution which converts the unchanged silver image into the well known blue tone. This type of process was decidedly complex, with great number of progressive steps required, and print uniformity a general problem.

## Miller Develops New Procedure

With the technical and engineering experts of Consolidated cognizant of the limitations of the Magnacolor type of process, research was conducted on a more simplified procedure. Mr. Arthur J. Miller, now general manager of the Fort Lee, New Jersey, plant of Consolidated—about seven years ago—conceived the idea of a

non-color-sensitive emulsion containing color couplers in place of the ordinary double-coated positive which required the applying of subsequent coloring agents to black and white images.

Following a long series of experiments and research, the color-coupler emulsion system was developed to a point where it gained the enthusiastic approval and support of Herbert J. Yates, president of Republic Pictures, who authorized placing of an initial order for 12,000,000 feet of Trucolor raw stock with Eastman Kodak—the stock to be manufactured in accordance with detailed specifications furnished by Miller.

## Resources Accentuate Development

The widespread financial, production and laboratory resources of Consolidated Film Industries and Republic Pictures were made available for the long process of testing and improving the Trucolor system. Without that combination of resources under the direct guidance and control of Yates, it is doubtful that the Trucolor process could have been brought to the point of production practicability in less than double the time actually consumed. Yates provided the huge amount of capital required to bring the process to the production line; the laboratory staff of engineers and chemical experts devised simplified procedure for printing and developing the color prints; and the production and technical resources of Republic studios were dovetailed into the proposition to provide suitable tests under actual production conditions.

## Production Camera Technique

In photographing Trucolor, the regulation N. C. Mitchell camera—with a few minor adjustments to provide for the use of bi-pack negatives—is used. Lenses and other camera accessories are the same as for standard black-and-white shooting.

High intensity arcs with Y1 filters, and incandescents with Macbeth filter at normal key or effect lighting; are utilized for interiors. Background projection can be used to the same extent at monotone.

For exteriors, the motion picture cameraman is not restricted to any particular type of natural lighting, but correct exposure and well-balanced negatives are necessary to insure good color rendition. From experience, it is stated that exteriors are handled practically the same as for black-and-white, and booster lights

are used for lighting faces, with reflectors employed for back and background lighting.

## Negative Development Simple

The exposed bi-pack negatives are immersed in a single developer bath which brings out the appropriate colors directly. A standard negative developing machine to specified time-gamma standards is used. The red dye of the front negative is removed in a sodium hydrosulphite bath as part of the same operation. Printer light tests of each negative provide preselection of proper printing exposure for each scene; and allow for 24 different printer lights.

## Printing Machine

Trucolor printing machine consists essentially of a printing head for each of the bi-pack negatives with an individual printer lamp, relay rack, control strip, and stop-motion unit for the matte boxes. Trucolor positive film is printed with the red image on one surface and the blue image on the other. After leaving the red gate, the raw stock takes a half twist and proceeds through the blue gate, where the blue image is exposed on the opposite surface of the film. A tungsten filament lamp is used as light source for each head, and exposure value is controlled through a relay arrangement by the control strip.

The processing machine is a top drive unit with one sprocket per shaft. Two developing tanks, a hypo tank and wash tank are located in the dark room section of the processing unit; while bleach, wash, hypo and final wash tanks—together with the track treatment unit—are in the white light end of the machine. Trucolor prints remain in the wet section for 45 minutes, while later drying time totals about 20 minutes.

Taking advantage of various technical improvements available, Trucolor prints use non-inflammable stock; the Dubray-Howell perforation; and the Eastman protective coating on both sides of the finished prints for greater wearability and service in the theatres.

## Trucolor Advantages

Important improvements of the Trucolor method in contrast to the double-coated prints of regulation bi-pack—as outlined by an official of Republic—include: simplicity and speed in processing; excellent luminosity on the screen; retention of negative image sharpness

(Continued on Page 101)



# "CAPTAIN FROM CASTILE"

## *Safari South of the Border*

By HERB A. LIGHTMAN

WHEN the Twentieth Century-Fox Studios sent a cast and crew on location to Mexico in the Fall of 1946 for filming of Samuel Shellabarger's best-selling novel, "Captain From Castile," it was as if a fair-sized town had suddenly been uprooted, spirited away, and set down in a foreign land thousands of miles from its former site. The problem of logistics was one that quite possibly would have given even the planners of the Normandy invasion a statistical headache.

Now that the film has finally reached the screen, it is interesting to look behind the richly Technicolored scenes and see just how this safari southward was conceived and executed. Planning began many months before the cameras started rolling on the \$4,000,000 picturization of the conquest of Mexico by Cortez. Director Henry King, a stickler for realism and a firm believer in aircraft as an aid to film production, took off in his own plane for the purpose of selecting locales by means of aerial reconnaissance.

Spanning the length and breadth of Mexico in his search for settings, he selected the town of Morelia as a reason-

able facsimile of 16th Century Spain. Located 350 miles southwest of Mexico City, Morelia still retains much of its original Spanish architecture constructed more than 200 years ago. Besides claiming the oldest university in North America, it boasts picturesque homes and gardens, stately old churches, and a rolling fertile countryside very much like that of Spain.

Some 250 miles beyond Morelia is the quaint little town of Uruapan which sprang into sudden prominence four years ago when the volcano Paricutin reared up out of a farmers' cornfield and began to belch boiling lava all over the landscape. It was decided that Paricutin would be a perfect "stand-in" for another volcano, Popocatepetl, which was in active eruption when Cortez pressed his invasion in 1521, but which has long since lapsed into snow-covered silence.

For his third major location, Director King selected Acapulco, which is famous not only as a swank beach resort, but as the theme for a set of lyrics crooned by Betty Grable in a previous picture. The combination of blue Pacific waters, white sands and waving palm trees was judged

an ideal setting for Cortez' first camp in the New World.

### **The Wheels Start to Grind**

With the locations definitely set, preliminary preparations for the jaunt swung into high gear. Exhaustive research had already been going on for months to make sure that the costumes worn by the Conquistadors and the Aztec Indians would be correct down to the smallest detail. The Mexico City Museum cooperated very closely with the studio's research department in providing valuable information as to the type of armor worn by Cortez and his men, the headdresses worn by the Indians, and the jewelry worn by the Indian girl, Dona Marina, who served as interpreter to Cortez. The museum even permitted the actress playing the role to wear the actual necklace which Cortez draped about the not-entirely-reluctant throat of Dona Marina back in the 16th Century.

Uncovered in the course of research was a minute description of the headdress worn by Moctezuma's nephew, Cacamatzin, when he was dispatched by the Emperor to meet Cortez and shower him with lavish gifts before begging him to give up his conquest and leave the country. This



(Left) The Technicolor camera rolls along a set of dolly tracks for a follow-shot of Tyrone Power, during filming of the Twentieth Century-Fox historical photoplay, "Captain From Castile." (Right) The camera crew sets up a long dolly shot for a scene of "Captain From Castile," involving 4,000 brightly be-decked Aztec warriors. A huge battery of reflectors at right provides FILL light for the scene. These sequences were shot near Uruapan, Mexico, during the company's 80-day location jaunt southward to our neighboring republic.



elaborate *chapeau*, with its hundreds of bright blue feathers and gold crown studded with glittering jewels, was precisely duplicated by skilled craftsmen at the studio. A sample was made in Mexico City of the type of cannon used by Cortez and his men, and 21 duplicates were fashioned as part of the arsenal of ancient weapons that was to be taken along.

The Prop Department was kept busy turning out the thousands of items to be used as properties in the location scenes. The enormous amount of paraphernalia included 5,000 pairs of sandals for Moctezuma's warriors, 5,000 Aztec lances, 6,000 shields, 400 cross-bows, an early model fountain pen, an hour glass, and a pair of 16th Century barber shears—plus wardrobe for the 19,500 extras who appeared in the film, as well as costumes for the leading and supporting players.

A thousand extra lances and shields were made to guard against loss or possible theft, but the Indians were so careful with their props that in all the time the company was in Mexico, only two lances were lost, and those through breakage. The lances weighed a total of 12 tons, while the 6,000 shields weighed eight tons. All of this equipment, along with tens of thousands of other items, was packed into a special train of eight box-cars to await the order to start rolling.

An incredible amount of paper work was required to move the company of 200 actors and technicians to Mexico. Each of the thousands of items of equipment, including everything from a complete dry cleaning plant to the sword worn by Tyrone Power, had to go through customs. It was necessary to make 32 copies of the customs list—18 in English and 14 in Spanish.

Early in November, 1946, the special

train, packed full of varied cargo, pulled out of Los Angeles bound for Mexico City. Aboard were special refrigerator units to preserve the delicate Technicolor film from the scorching tropical climate that was to be encountered.

At Mexico City, the equipment had to be taken off the train and loaded onto trucks, as there were no rail facilities from that point on. A fleet of 50 trucks carried the equipment 350 miles to Morelia, an additional 300 miles from Morelia to Uruapan, 200 miles from Uruapan to Acapulco, and finally 650 miles back to Mexico City.

### Lights!, Camera!, Action!

When the company arrived at each location, the equipment had to be unloaded, lights and reflectors unpacked, and the cameras made ready for shooting. Then arose the problem of issuing spears and shields to four thousand Indians, none of whom had ever seen a motion picture, let alone appeared in one. For one scene near Uruapan, the prop men started before day-break, using candles and lanterns for illumination. They used a distribution system worked out at the studio. The breech cloths worn by the Indians had been made up in five different colors—yellow, red, brown, green and white. The color of the breech cloth determined the color and design of warrior's shield to be issued. The Indians had been divided into five groups of 800, with each group wearing a particular color of cloth issued by the Wardrobe Department. Then, for example, the men wearing red breech cloths marched past and were given their particular color of shields and spears—after which the next group followed immediately. In exactly three hours, the entire four thousand had been fitted out to rep-

resent Moctezuma's forces on the march to meet the army of Cortez.

Since no extras were taken along from Hollywood, the Casting Department relied on local Mexicans and Indians for talent in the crowd scenes. More than 19,500 of these "actors" appeared before the cameras, with as many as 4,500 taking part in one sequence staged at the edge of Paricutin's lava beds.

An immense commissary was set up to feed not only the Hollywood company but the extras as well. A total of 205,000 lunches were served during the 80 days of actual shooting. These lunches were transported by truck over distances up to 40 miles, with as many as half a dozen trucks being required for a single day's feeding.

During the three and a half months in Mexico, the company filmed scenes in five Indian villages where the inhabitants had never seen a visitor, much less a movie camera. The natives co-operated perfectly, however, permitting the cast and crew to go about their duties and even maintaining complete silence while the cameras were rolling. The company worked on 80 different sets in Mexico which, together with 20 built at the studio for the filming of interiors, brought the total up to 100.

One of the most lavish settings was the camp of Cortez built within sight of the smouldering volcano. It took 400 workers two months to construct a mammoth Aztec temple, 60 huts of various shapes and sizes, and even a graveyard marked by 75 crosses. When the company left Uruapan, this village was taken over by a tribe of Indians to replace the homes they lost when the lava from Paracutin overran their village.

"Captain From Castile" had one of the

(Continued on Page 103)



(Left) The conquering army of Cortez marches toward the stronghold of Aztec chieftain, Montezuma, while an angry volcano, Paricutin, belches smoke and fire into the sky. A scene filmed in Mexico for "Captain From Castile." (Right) A Twentieth Century-Fox location camera crew at Acapulco, Mexico, records a Technicolor scene of Tyrone Power and co-star Jean Peters in a bit of action from "Captain From Castile." Directors of Cinematography on the film were Charles G. Clarke, A. S. C., and Arthur Arling, A. S. C.



# Academy Award Nominations For Best Cinematography of '47

## BLACK-AND-WHITE

"The Ghost and Mrs. Muir," (20th Century-Fox) with Charles Lang, Jr., A. S. C., as Director of Photography.

"Great Expectations," (J. A. Rank-UI), with Guy Green as Director of Photography.

"Green Dolphin Street," (Metro-Goldwyn-Mayer) with George Folsey, A. S. C., as Director of Photography.

## COLOR

"Black Narcissus," (J. A. Rank-UI) with Jack Cardiff, A. S. C., as Director of Photography.

"Life With Father," (Warner Brothers) with Peverell Marley, A. S. C., and William V. Skall, A. S. C., Directors of Photography.

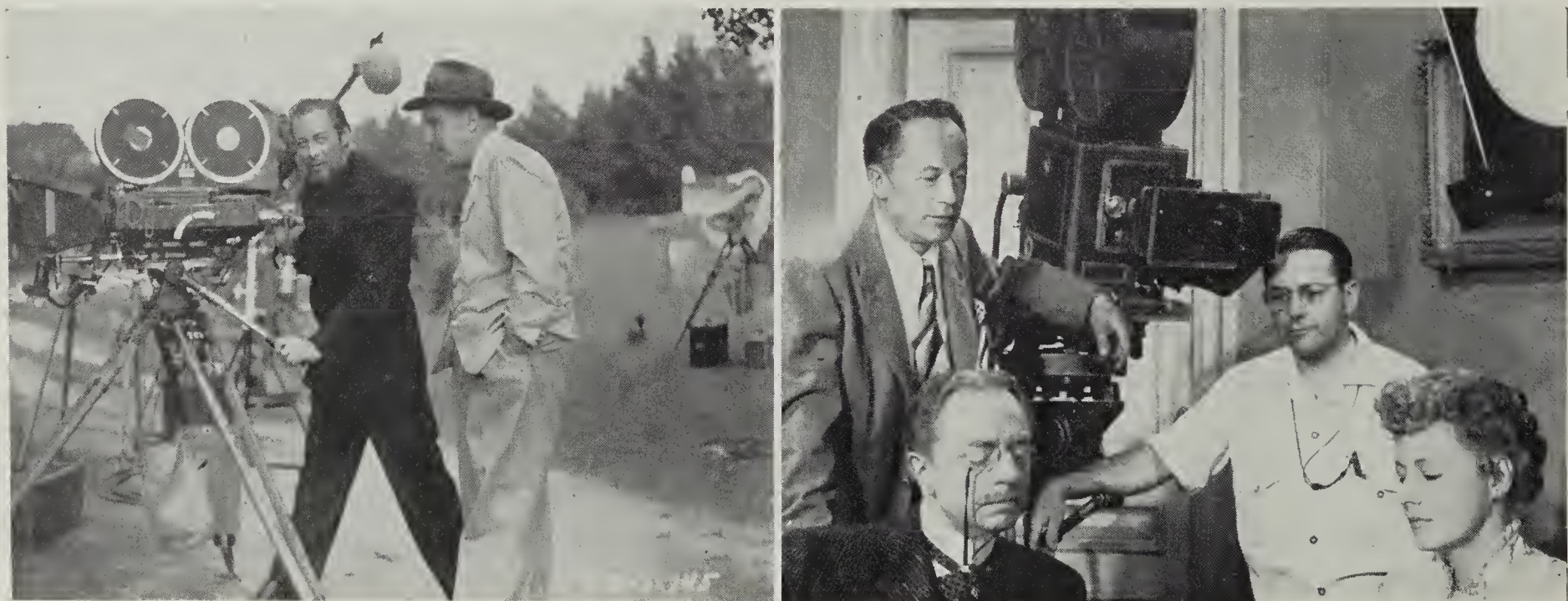
"Mother Wore Tights," (20th Century-Fox) with Harry Jackson, A. S. C., as Director of Photography.

THE best in motion picture photography for feature productions released in the United States during 1947 was selected by members of the American Society of Cinematographers and Directors of Photography in the Hollywood studios, with the results as listed above.

The three "best" candidates are now under consideration by the 2,000 mem-

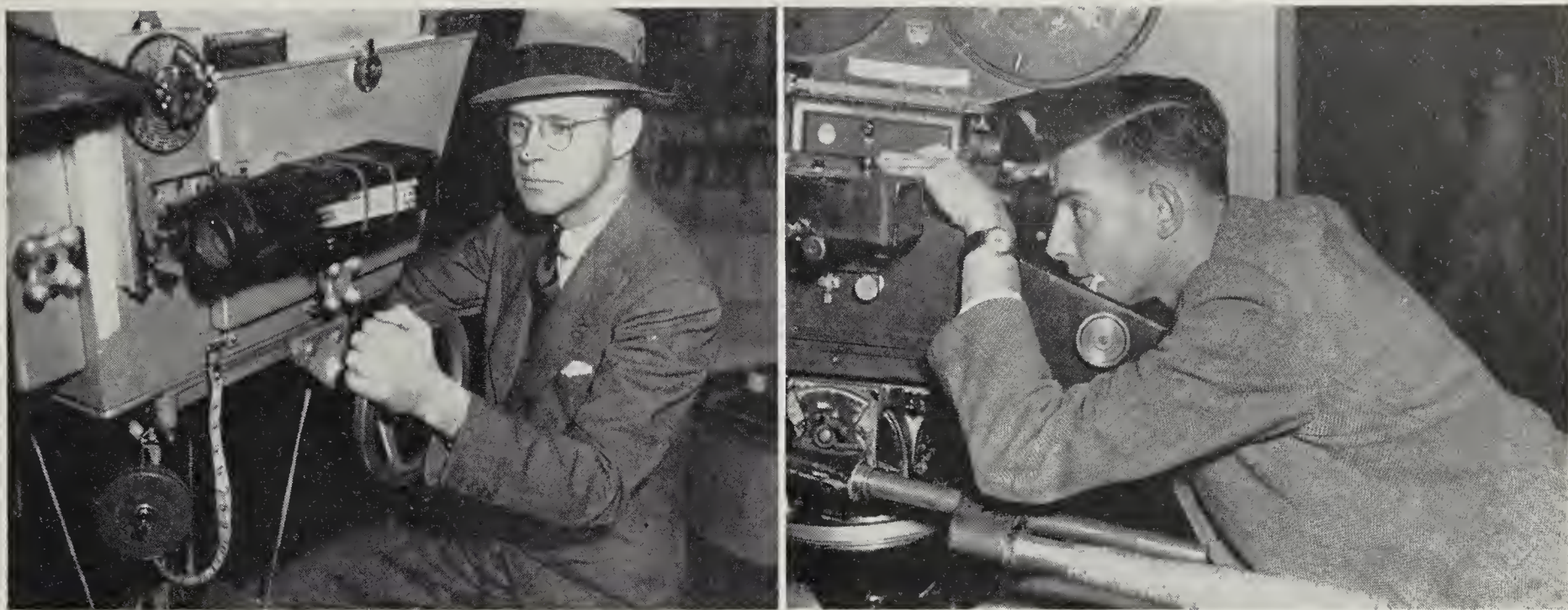
bers of the Academy of Motion Picture Arts and Sciences, who will vote for the one production the majority feels most outstanding in the field of cinematography. Winners will be announced—along with the "bests" in other branches of creative motion picture production—at the gala annual Academy Award presentation program at the Shrine Auditorium, Los Angeles, March 20th, 1948.

The three productions cited for outstanding cinematography for 1947 in both black-and-white and color were selected by the top craftsmen in motion picture photography, and the Directors of Photography concerned have been signally honored for their accomplishments. Although only one winner in each class can be voted by the Academy membership, those who reached the finals with their



Left, Charles Lang, Jr., A. S. C., observes Rex Harrison operating the camera on set of "The Ghost and Mrs. Muir." Right background, Peverell Marley, A. S. C. (left) and William V. Skall, A. S. C., at right of camera, are ready for William Powell and Irene Dunne to rehearse a shot for "Life With Father."





At left, George Folsey, A. S. C., nominated for his Photographic Direction of "Green Dolphin Street." Guy Green is shown at his camera at right. Green was cited for Direction of Photography of "Great Expectations."

achievements must be justly proud of their work.

The international complexion of the Academy Award nominations is clearly shown by the nominations of two British-made productions: "Black Narcissus," photographed in color by Jack Cardiff, A. S. C., and "Great Expectations," with Guy Green as Director of Photography.

Both were J. Arthur Rank features released by Universal-International in the United States.

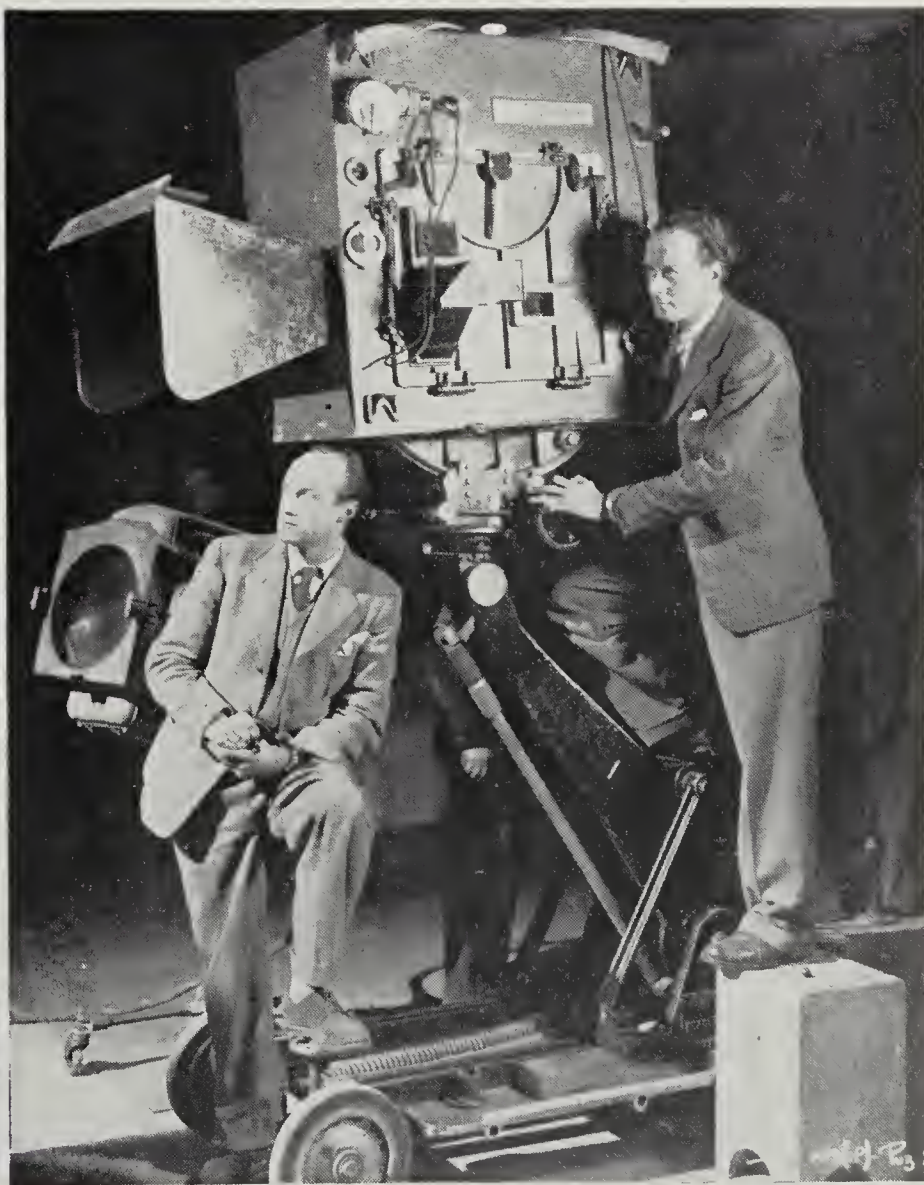
#### Special Photographic Effects

Finalists for outstanding photographic effects of 1947 include:

Cecil B. De Mille's "Unconquered" for Paramount (visual: Farciot Edouart, A.

S. C.; Devereux Jennings, A. S. C.; Gordon Jennings, A. S. C.; Wallace Kelley, A. S. C.; Paul Lerpae, A. S. C.; audible, George Dutton).

Metro-Goldwyn-Mayer's "Green Dolphin Street:" (visual, Malcolm Brown, Cedric Gibbons, A. Arnold Gillespie, Donald Jahraus, Warren Newcombe; audible: Douglas Shearer).



(Left), Harry Jackson, A. S. C., behind his Technicolor camera on the set for "Mother Wore Tights," with Director Walter Lang seated with script in foreground. (Right), Jack Cardiff, A. S. C., under the hood of the Technicolor camera for a scene for "Black Narcissus."





# Motion Picture Photographer to Director

By EZRA GOODMAN

Ted Tetzlaff, A. S. C., on a high boom for shot of "The Window" in New York.

**T**ED TETZLAFF, A.S.C., one of Hollywood's foremost cinematographers who recently turned to directing, is in New York filming "The Window," a movie chase mystery. This is the first picture in recent years to be filmed in its entirety in the East. Other films, like "Boomerang," "Kiss of Death," and "Naked City," were made partly there and partly in Hollywood. "The Window," under Frederic Ullman, Jr.'s supervision, was scheduled to be in production in New York for seven weeks. Five weeks of shooting were to be done in midtown Manhattan on actual locations and two weeks at the RKO-Pathe studio at 106th Street and Park Avenue where the cutting, sound and music recording were also to be completed.

Tetzlaff, tall and dapper, who is sufficiently photogenic to be a leading man in one of his own films, was renowned as a "glamour" photographer of women be-

fore becoming a director. He was Carole Lombard's cameraman, and also lensed Ruth Chatterton, Jean Arthur, Dorothy Lamour, Veronica Lake, Dorothy McGuire, Ingrid Bergman and Rita Hayworth. Today Tetzlaff has forsaken glamour for directorial realism. He believes that glamour is gradually going by the board in the contemporary, realistic world.

"I think the day of the beautiful, gorgeous creature on the screen has passed," said Tetzlaff. The public does not want to see pretty, sticky faces anymore. Moviegoers would rather look at interesting faces than at pretty ones. Pretty girls are a dime a dozen. There are no longer any rules about women's faces in pictures, except that they should not be too unphotogenic. What counts is personality and acting ability more than looks. Put two seemingly attractive people side by side and one will speak to you while the other

will just die on the screen.

"Flaws in a person's appearance can be straightened out without much trouble. Teeth can be fixed and all kinds of defects. Even the most glamorous stars have a good side and a bad side to their faces. Carole Lombard, for example, had a large jaw and every angle and expression had to be watched in the camera.

"So-called 'glamour' photography is no different from any other kind of photography. Any first-class cameraman can do it. It means simply that the cameraman concentrates his camera on the feminine star of the film to the neglect of the other players and often at the expense of the picture as a whole. I always had my doubts about such photography. A studio usually has a large investment in its top glamour girls. As they mature and grow older this investment has to be pro-

(Continued on Page 102)



The camera boom dropped to street level (left) to photograph the tenement house sequence on the right.



**F**OR many years, studios have attempted various methods of securing stills during actual shooting on sets. Such a procedure would prove a time-saver in production, eliminating the delays occasioned by specially posing stills after a scene is completed by the motion picture camera. During the past decade, when the speed of film has been considerably increased, studios have turned to candid cameras of the Leica type, or Rolli-flexes, to secure dramatic stills while the motion picture camera was turning, or during final rehearsals.

Such still shots were and are made generally without flash bulbs, as the latter would register on one or more frames of the motion picture negative or greatly disturb the players during a scene. But where low key lighting is employed by the Director of Photography, the non-flashbulb still cameras cannot be used due to the low light levels.

Cognizant of this problem as a Director of Photography, Joseph Walker, A. S. C., set to work to devise a method which would allow the shooting of stills during the actual filming of a production. His attack was utilization of electronic light as a quick flash source synchronized with both the motion picture and still camera shutters to photograph the still while the

motion picture shutter was closed momentarily between frames.

The device, first successfully used by Walker on the Columbia production of "The Mating of Millie," consists of a commutator which is easily attached to the synchronous motor on the motion picture camera. It is adjusted so that it can only make contact when the motion picture camera shutter is closed.

A wire connects the motion picture camera commutator with the electronic flash light mounted on a standard in proper position to light the players, and the still camera operated by the photographer. When the latter wishes to make a still, he presses the camera button, and the still

shutter opens at the same instant of the electronic flash within a fiftieth of a second of the button pressing when the motion picture camera shutter is closed.

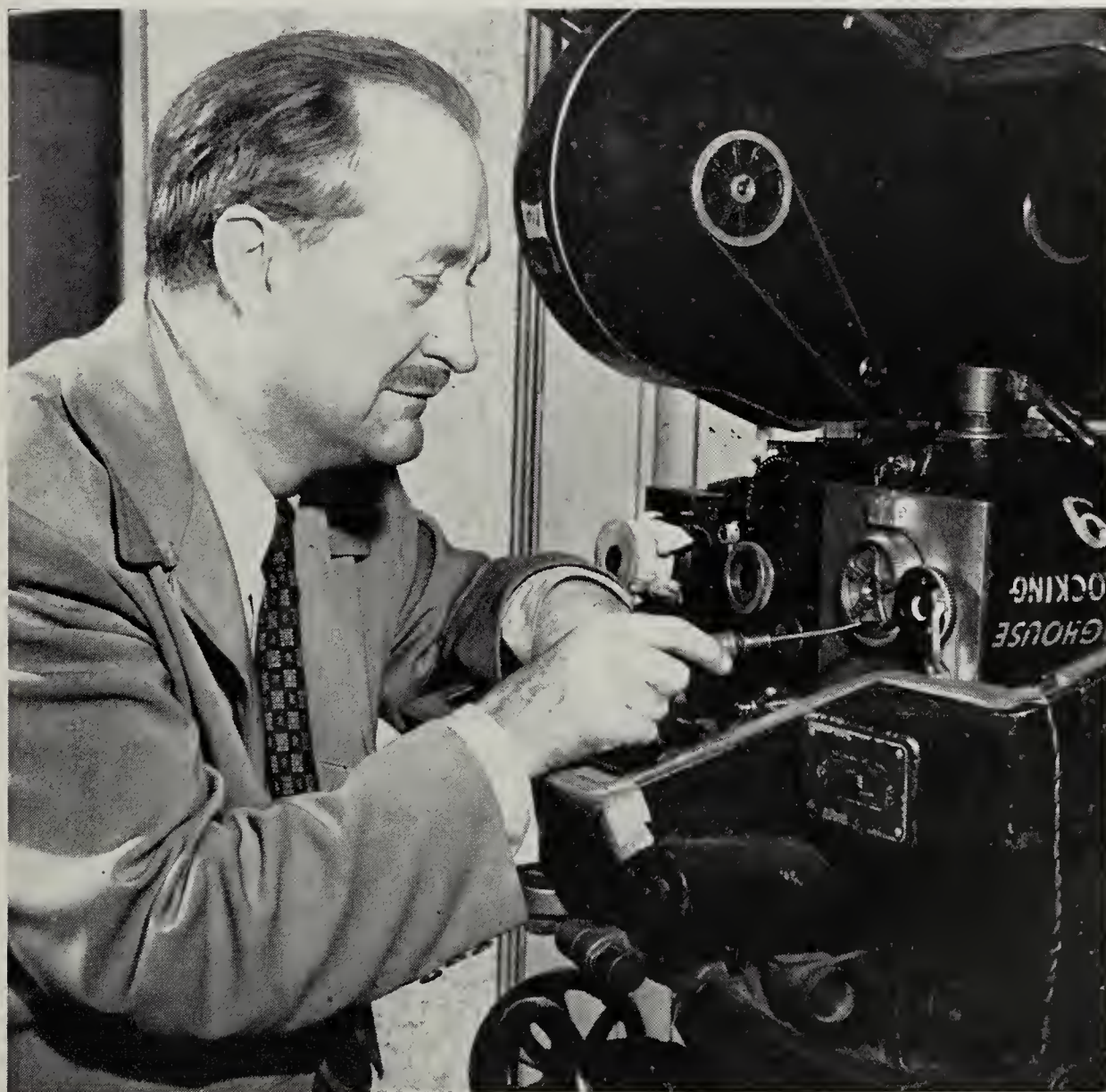
The electronic flash source is particularly suitable as it has a very fast flash of 1/4,000 of a second, and hence is more easily synchronized with the closed motion picture camera shutter than regulation flash bulbs which have a much longer peak of illumination and which might carry flash over onto the frames of the motion picture negative. Another favorable factor is that it can be used over and over without replacement, and the still photographer can make his pictures as fast as he can switch a new negative into his camera.

The electronic flash device also has a limited amount of noise in comparison to the flash bulbs, and has proven less distracting to the players photographed. Walker points out that the device is especially valuable for action shots in the studio where the scenes are in low key. In such a situation, the still photographer was at a disadvantage as there was not sufficient light to secure action stills. However, with the electronic light, the still photographer can bring it up to as hot an intensity as required—as much as 900 to 1,500 foot candles—even though set for the motion picture is down as low as 100 foot candles or less. Walker stated that the device enables the still man to secure full color transparencies of action scenes through ability to regulate the amount of light required.

Walker does not anticipate that his invention will be widely employed by the studios. He points out that the device will be best for interior action shots, fights, etc., which are normally hard to re-pose or light for stills after a scene is completed. But most favorable factors include economy in making stills during filming, and the ability to obtain action and unusual stills that would otherwise be unobtainable.

Walker is one of the leading inventors among the members of the A. S. C. In addition to his top ranking position as a Director of Photography for many years, he has designed and invented many valuable devices for motion picture cameras, and in the radio and electronics fields.

## ELECTRONIC FLASH FOR STILL EXPOSURES DURING SHOOTING



Joseph Walker, A. S. C., points to commutator installed on motion picture camera which allows synchronization of still camera flash when film camera shutter is closed between frames.



# 14 AMERICAN STANDARDS FOR MOTION PICTURES APPROVED IN 1947

*(The following is the report of C. R. Keith, chairman of the American Standards Association Sectional Committee on Standards for Motion Pictures, Z22. Adoption of these standards by ASA is the result of intensive work and investigation by the Society of Motion Picture Engineers, which closely cooperates with ASA. Acceptance of these standards by ASA is preliminary to their acceptance as international standards by the International Standards Organization of the United Nations. This standardization, according to SMPE engineering vice president John A. Maurer, effects a great saving of money for the motion picture industry by simplifying production and distribution of equipment.)*

**D**URING the year 1947, fourteen American Standards were approved in the field of motion pictures. Of these, the following three were reaffirmed from previous Z22 standards with only editorial changes:

Z22.10—Emulsion Position in Projector for Direct Front Projection of 16-Millimeter Silent Motion Picture Film

Z22.16—Emulsion and Sound Record Positions in Projector for Direct Front Projection of 16-Millimeter Sound Motion Picture Film

Z22.22—Emulsion Position in Projector for Direct Front Projection of 8-Millimeter Silent Motion Picture Film

Although the two 16-millimeter emulsion position standards (Z22.10 and Z22.16) were unanimously reaffirmed with only editorial changes, reconsideration was subsequently requested by Mr. K. F. Abeel, representing the General Electric Company. Since several other members who had voted for reaffirmation joined Mr. Abeel in asking for reconsideration, the Chairman appointed the following subcommittee to prepare further analysis of 16-millimeter photographing and printing practices for consideration of the entire Committee: A. W. Cook, Chairman, K. F. Abeel, M. C. Batsel, O. Sandvik and E. Schmidt.

The four following perforating standards were reconsidered and modified in their methods of dimensioning, so as to be more useful in actual practice:

Z22.5—Cutting and Perforating Dimensions for 16-Millimeter Silent Motion Picture—Negative and Positive Raw Stock

Z22.12—Cutting and Perforating Dimensions for 16-Millimeter

Sound Motion Picture Negative and Positive Raw Stock

Z22.17—Cutting and Perforating Dimensions for 8-Millimeter Motion Picture Negative and Positive Raw Stock.

Z22.36—Cutting and Perforating Dimensions for 35-Millimeter Motion Picture Positive Raw Stock

The principal changes in the above standards consisted of showing dimensions as measured from the edges of sprocket holes rather than from center lines.

In reviewing the 35-Millimeter Projector Sprocket Specification, it was found desirable to further study the sprocket diameter, which had been standard since 1930. In the reapproved edition, Z22.35-1947, 16-Tooth 35-Millimeter Motion Picture Projector Sprockets, this dimension has been changed to 0.943 in. (from 0.945 in.) to reduce film wear.

The standard for photographic density Z22.27 was revised to take advantage of the more detailed standard developed for still photography Z38.2.5-1946.

Two new standards on camera and projector apertures were based on corresponding Z52 war standards:

Z22.59—Photographing Aperture of 35-Millimeter Sound Motion Picture Cameras

Z22.58—Picture Projection Aperture of 35-Millimeter Sound Motion Picture Projectors

Film Nomenclature Standard Z22.56-1947 and 16-Millimeter Buzz Track Test Film Z22.57-1947 were also taken from Z52 war standards without change. The new standard Z22.55-1947, 35-Millimeter Sound Motion Picture Release Prints, is essentially a statement of current American practice in the preparation of 35-Millimeter motion picture film in 2000 ft. lengths for distribution to theatres.

Shortly after the Screen Size Standard Z22.29-1946 was adopted the objection was raised that it was not clear as to whether or not the dimensions included the entire screen or only the useful area. Consequently the Chairman asked the Motion Picture Research Council to make a proposal for revision which would clarify this point.

The following nine proposed standards on 35-millimeter test films were prepared by the Motion Picture Research Council and submitted by letter ballot to members of the Z22 Committee:

Z22.60—Theatre Sound Test Film for 35-Millimeter Motion Picture Sound Reproducing Systems

Z22.61—Service-Type Sound Focusing Test Film for 35-Millimeter Motion Picture Sound Reproducers

Z22.62—Laboratory-Type Sound Focusing Test Film for 35-Millimeter Motion Picture Sound Reproducers

Z22.63—Service-Type Multifrequency Test Film for 35-Millimeter Motion Picture Sound Reproducers

Z22.64—Laboratory-Type Multifrequency Test Film for 35-Millimeter Motion Picture Sound Reproducers

Z22.65—Service-Type Scanning Beam Uniformity Test Film for 35-Millimeter Motion Picture Sound Reproducers.

Z22.66—Laboratory-Type Scanning Beam Uniformity Test Film for 35-Millimeter Motion Picture Sound Reproducers

Z22.67—1000-Cycle Balancing Test Film for 35-Millimeter Motion Picture Sound Reproducers

Z22.68—Buzz-Track Test Film for 35-Millimeter Motion Picture Sound Reproducers

Each of these proposals covers a test film which is in general use in this country.

Two proposed standards for dimensions of 200-mil push-pull sound tracks were also submitted by the Motion Picture Research Council. Since these proposals did not include tolerances the Chairman appointed the following committee to prepare revised proposals conforming to other sound track standards: G. R. Crane, Chairman, M. C. Batsel, W. F. Kelley, L. L. Ryder, and W. C. Miller.

The following 15 standards were referred to the Society of Motion Picture Engineers for revision on November 5, 1945:

Z22.7—Camera Aperture for 16-mm. Silent Motion Picture Film

Z22.8—Projector Aperture for 16-mm. Silent Motion Picture Film

Z22.13—Camera Aperture for 16-

(Continued on Page 90)



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# A New Light Source For Motion Picture And Television Studio Lighting

By D. W. PRIDEAUX

(Lamp Department, General Electric Company, Los Angeles)

**H**OLLYWOOD cameramen and electrical men have been asking for years for a new light source which would overcome the undesirable characteristics of present light sources. The ideal light, these groups stated, would have the desirable photographic characteristics of the carbon arc, with the simplicity, stability, cleanliness, and quietness of the incandescent lamp.

An ideal light source should provide a cooler light, should be suitable for use with all types of color films as well as black and white without the use of color-correcting filters. Such a source should be efficient and long lived. A source seeming to have these desirable characteristics has resulted from General Electric research work started before the war and carried

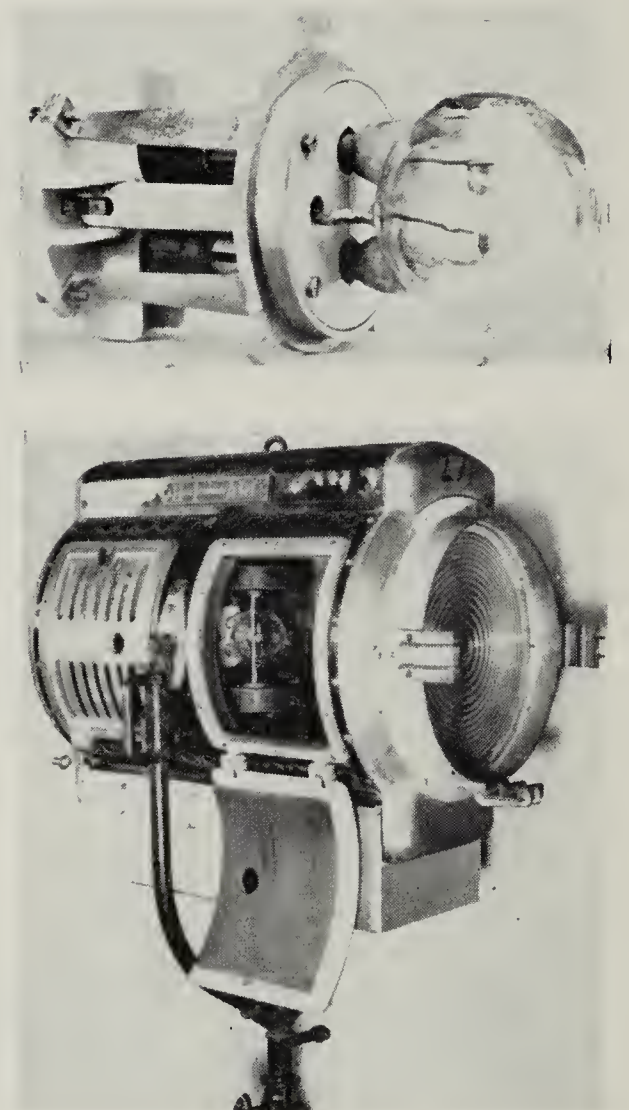
to a successful conclusion by their affiliates in Britain during the war.

The research was done in the field of mercury arcs, since it seemed most promising in overcoming of objections to present sources. Mercury arcs are:

1. Relatively high in efficiency in conversion of electrical energy into light.
2. Relatively low in heat radiation.
3. Long lived.
4. Silent in operation.
5. Clean.

Their use in the field of motion picture photography has been limited by these factors:

1. The color quality of the light produced was not suited to color photography and, in fact, was not so

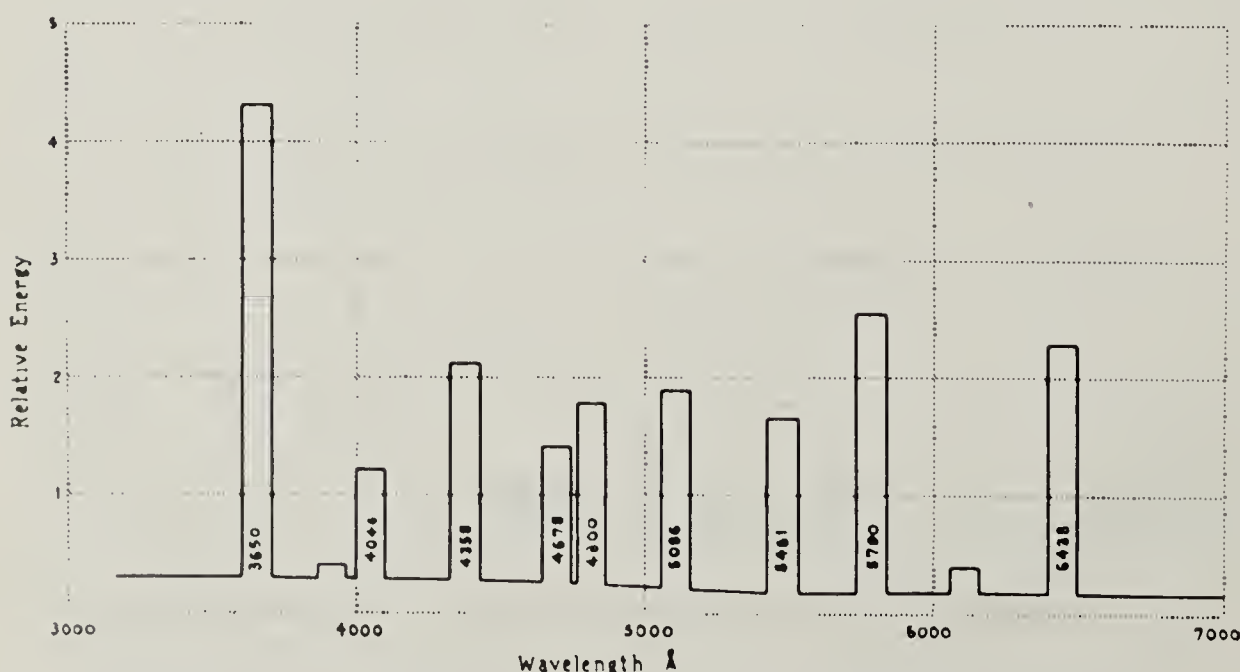


(Above) (Fig. 1) Single-ended construction of a compact source lamp. (Below) Experimental housing to preheat lamp for quick start by ionizing pulse.

good as desired for black and white photography.

2. The shape and dimensions of the sources were much larger than desirable, and they did not provide "hard" light.
3. The "warm-up" time of a cold lamp and the re-starting time of a hot lamp were excessive.
4. The maximum wattage was limited to a value entirely too low to serve many of the lighting needs of the motion picture studio.

While General Electric lamp research in America during the war was on assigned projects, their British associates worked on this source in connection with an assigned war project. The British Thomson-Houston Company, Ltd., lamp in a 5-kilowatt size is illustrated in Figure 1. Photographs or descriptions of the American lamp are not available at this writing since it is undergoing further improvements. The British lamp, however, was exhibited, lighted, and discussed by General Electric engineers before an interested audience at the Academy Theatre last September 30. Also a Technicolor test film, exposed in Britain, showing comparisons between the new mercury lamp and carbon arcs was screened. Comments from the audience indicated the color of the light source was quite satisfactory to most. Cameramen have voiced the comment that the skin tones as shown



Spectral distribution of radiation after cadmium has been added to the mercury arc lamp.

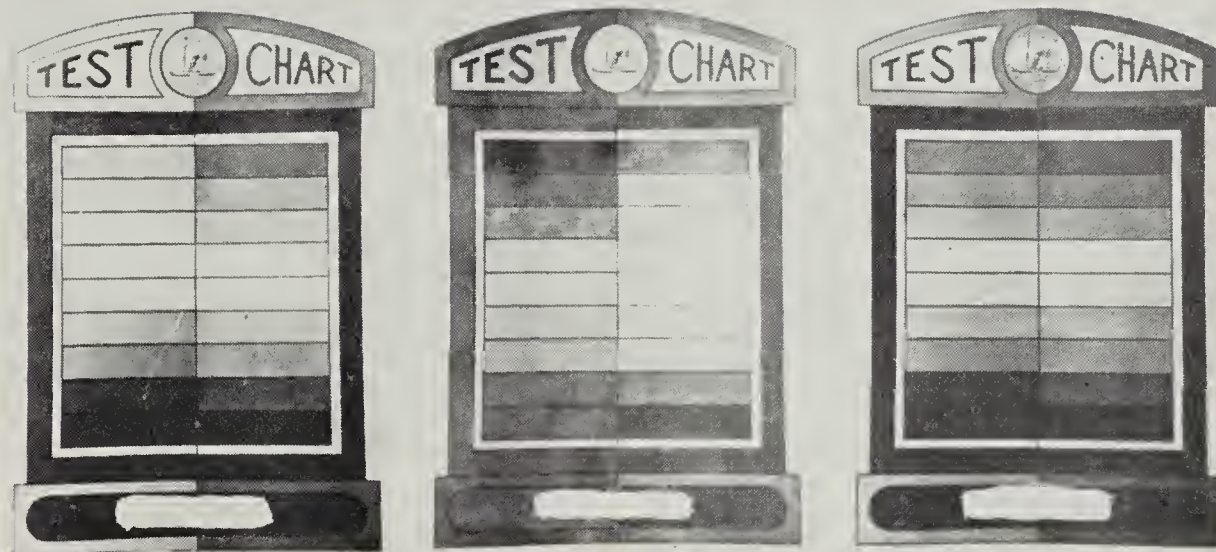


by this film seem better under the new lamp.

The lamp in the 5-kilowatt size, about as big as an orange, has a quartz bulb. In the center of the bulb and spaced close together, perhaps up to 10 millimeters apart, are massive tungsten electrodes. The light source then is quite compact and somewhat spherical in shape. The advantages of this size and shape are immediately apparent, not only for motion picture sets but for projection and other uses as well.

The close spacing of electrodes and the bulb size carefully chosen small enough to assure a relatively high operating pressure, provides a source brightness of approximately 100,000 candlepower per square centimeter. The lamps are cooled by natural convection currents and do not require forced cooling. Developmental lamps are reported to have given brightness values which are higher than those attained in the high intensity carbon arcs.

The color of light from ordinary mercury arcs is well known. The radiations emitted are not continuous as from an incandescent lamp or carbon arc, but rather in four principal bands with red lacking almost entirely. While some improvement in color quality is achieved by the same technique used to obtain a source of high brightness, the major improve-



Ilford color charts photographed on panchromatic film when illuminated by: left, mercury cadmium lamps; center, mercury arc lamps; and right, tungsten filament lamps. The left hand side of the charts includes colors of the spectrum ranging from red at top to violet at bottom. The right hand side consists of neutral panels in shades to match the visual luminosity of the adjacent color.

ment is obtained by the addition of certain metallic vapors to the mercury. That these provide the red radiation and fill in the gap in the blue green of the mercury spectrum was known and done both here and abroad a number of years ago. At that time the developments did not appear promising due to a loss in luminous efficiency. When cadmium is introduced into the new type of lamp, there is a considerable improvement in color, and it is achieved at an almost negligible loss in efficiency. Figure 2 illustrates the

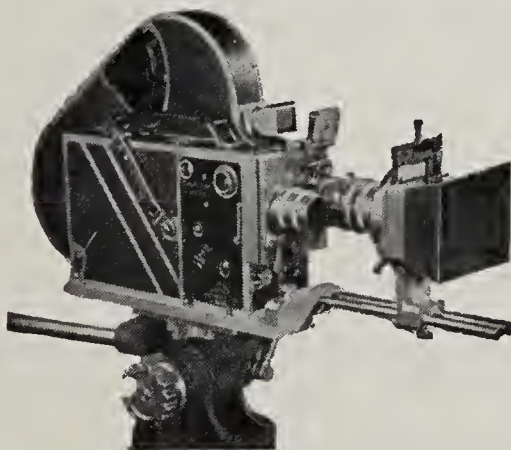
spectrum of a 5-kilowatt mercury cadmium lamp.

The new mercury cadmium lamp normally produces 45 to 55 lumens per watt with the light output falling to about 75 percent of its initial value at the end of its life. Practical life in these types of service should be quite satisfactory, the lamps probably being removed from service before burnout because of gradual light depreciation.

Sets are normally supplied with 115-

(Continued on Page 100)

## Professional Type Combination SUNSHADE and FILTER HOLDER

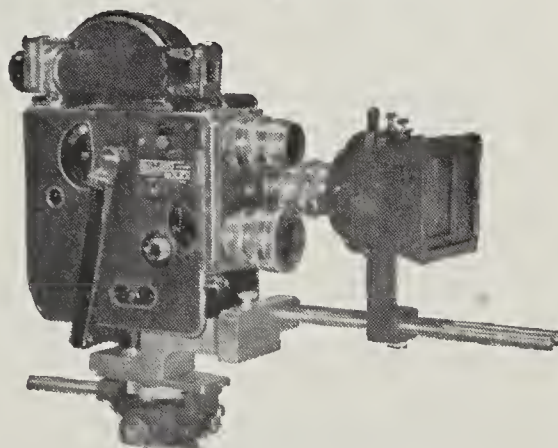


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## American Standards

(Continued from Page 86)

- mm. Sound Motion Picture Film
- Z22.14—Projector Aperture for 16-mm. Sound Motion Picture Film
- Z22.19—Camera Aperture for 8-mm. Silent Motion Picture Film
- Z22.20—Projector Aperture for 8-mm. Silent Motion Picture Film
- Z22.34—Cutting and Perforating Negative and Positive Raw Stock for 35-mm. Motion Picture Film
- Z22.4 —Projection Reels for 35-mm. Motion Picture Film
- Z22.11—Projection Reels for 16-mm. Motion Picture Film
- Z22.23—Projection Reels for 8-mm. Silent Motion Picture Film
- Z22.26—Sensitometry for Motion Picture Film
- Z22.24—Film Splices Negative and Positive for 16-mm. Silent Motion Picture Film
- Z22.25—Film Splices Negative and Positive for 16-mm. Sound Motion Picture Film
- Z22.6 —Projector Sprockets for 16-mm. Motion Picture Film
- Z22.18—8-Tooth Projector Sprockets for 8-mm. Motion Picture Film

It is hoped that the Society will submit recommendations for revision of these standards at an early date.

At the request of Eastman Kodak Company war standards Z52.51-1946 Base Point for Distance Scales 16-mm. Cameras and Z52.50-1946 Lens Registration Distance 16-mm. Cameras, were referred to the Society of Motion Picture Engineers on February 4, 1947, for recommendations for American Standards.

Fadar Setting Instructions Z22.32-1941 was unanimously withdrawn since the practice described in this standard is no longer followed in this country.

The attention of the Committee was drawn to the apparent omission of silent pictures from the Scope as originally adopted. Since this was, of course, unintentional the following revision of the Scope was proposed and adopted:

The formulation of definitions, di-

mensional standards, methods of test and rating, and performance characteristics of materials and devices used in silent and sound motion picture photography and in sound recording, processing, and reproduction in connection therewith.

The revised Scope has been submitted to the International Standards Organization for its approval as the Scope for the international project. In this connection it will be recalled that the American Standards Association has been designated as the Secretariat of Motion Picture Standards for the ISO. All ASA standards on motion pictures are being submitted to the ISO for consideration as international standards.

The Chairman wishes to express his appreciation for the active cooperation of the Society of Motion Picture Engineers, Motion Picture Research Council, and members of the Z22 Committee.

## Welcome Extended by Belfast YMCA Cine

The Belfast YMCA Cine Society, only organization in northern Ireland for amateur cinematographers, extends an invitation to any American amateur movie enthusiasts who might visit Belfast to get acquainted and make use of the club's facilities.

E. Silver, Hon. Secretary, advises: "We have our own premises, where we regularly hold meetings, lectures and shows throughout the year. Film and apparatus is in very short supply here, and we advise all tourists to bring along their own personal supply with them. We have had the pleasure of meeting a few amateur movie makers from your country, and visitors are assured of a warm welcome at our Cine Club, where we can arrange to assist them and provide projection for their films."

The secretary's address is 23 Church Street, Belfast, N. Ireland.

Paul A. Wagner has been appointed sales manager of the educational division of Bell & Howell Company.

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**writes Roy Trahan of Tulane University**

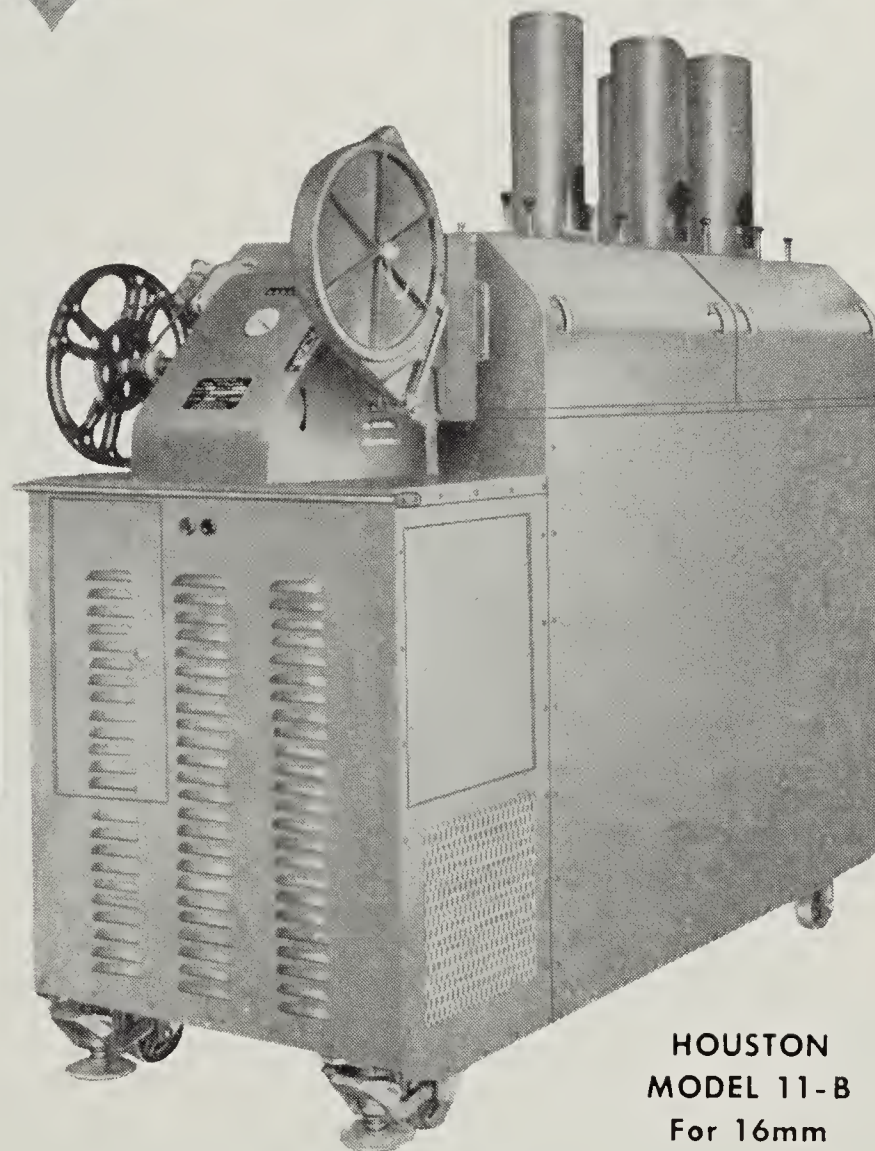
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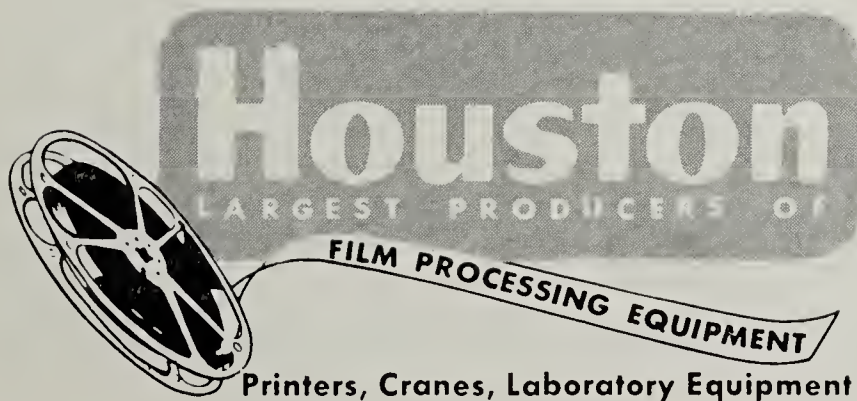
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# AMONG THE MOVIE CLUBS

## Milwaukee Amateur

Fifth annual Gala Show of the Amateur Movie Society of Milwaukee will be held at the Shoreham auditorium on evening of April 2nd, with Gene Millman as managing director of the event.

At a recent meeting, miniature "Oscars" and prizes were presented to winners in the annual club contest for 1947 in both the 16 mm. and 8 mm. divisions. Walter Chapelle tabbed first honors in the 16 mm. class for his "Blue Horizons"; with second going to the William Rheingans for "The Magic Carpet;" and third to Mrs. Erma Niedermeyer for "As the Spirit Moves Us."

Mrs. DeLyilia Mortag won first place in the 8 mm. division for her "No Soap;" with Joseph Salerno second with "Three Fishermen," and Marley J. Bready hitting third spot for her "Torcheat." Mrs. Mortag was also presented with the plaque in recognition of her record number of shut-in showings. Looks like the gals are giving the fellows plenty of competition around that Milwaukee club!

At the February 11th meeting, held at the Red Arrow Club, program consisted of a group of A. C. L. prize winning films; survey of new products on the market; correct exposure demonstration by John Bakke; and film, "Scouting Camp Activities," which was photographed for the Racine Scout Council.

## Brooklyn Amateur

Demonstration and film on the Zoomar lens featured the February 4th meeting of the Brooklyn Amateur Cine Club, held at Neighborhood Club. Film program for meeting of January 21st comprised: "Good Earth," by Mrs. B. Seckendorf; "Green Gold" and "In Our Garden," by Mildred Caldwell of Los Angeles Cinema Club; "My Home Town," by Burton Rackett; "Sunrise Lake," by Charles Rose, and "Memories of 1947," by Horace Guthman.

## Lummus Camera

E. Lindheimer was elected leader of the movie group of the Lummus Camera Club, composed of employees of the Lummus Company, New York City. At meeting set for February 5th, the movie section discussed plans for an early film contest. Utah Tsao and Bob Beck were winners in the "How I Spend the Weekend" contest.

## Alhambra La Casa

Regular monthly meeting of the La Casa Movie Club of Alhambra, Calif., was held in the YMCA building on evening of February 16th. Film program was "The Call of the Open Road," presented by Dr. Leslie A. Smart.

## New York Eight

Combination of revivals and new films composed the film program of the January 19th meeting of New York 8MM. club, held at the Hotel Pennsylvania, New York City. Pictures included: "Lake Placid," by Joseph J. Harley; "Two Kids and a Pup," by Joseph Hollywood; "Vanishing Autumn" and "Tender Friendship," by Tatusichi Okamoto of Japan; "Conducted Tour," by Helen Loeffler; and "It's All Over," by Terry Manos.

Annual Gala Night of New York Eight will be held on evening of May 14th at the Hotel Pennsylvania.

## Bay State

Bay State Cine Club has been organized in Boston, and is currently conducting its initial membership drive in that city. Meetings will be held on second Thursday of each month at 18 Olive Street, and those interested in the Boston district are invited to attend.

Charles Carbonaro is the president, and early club activities include the producing of a short comedy at meetings; in addition to programs of amateur films, lectures and instructional talks.

## Utah Cine Arts

LeRoy Hansen heads the Utah Cine Arts Club of Salt Lake City as president for the ensuing year; with Helen Christensen, vice president; J. F. McClement, treasurer; and Virginia Smith, secretary.

Dr. C. Elmer Barrett provided a lecture and demonstration on composition at the February 18th meeting, with film program including a 16 mm. film by William Langton, and "Fantasies of Form and Color," by Al Londema.

## Washington Cinematographers

Films featured at the February 16th meeting of Washington Society of Amateur Cinematographers, Washington, D. C., included: "Whispering Pines," by E. C. Merriam; "Down Mexico Way," by John E. Oliveras; "Army Show," by Al Bodwell; and "Three Spring Gardens," by Hazelle M. Johnson. More than 120 members and guests attended. Annual banquet of WSAC will be held on May 25th, according to plans of officers.

## San Francisco Cinema

Extensive film program for the February 17th meeting of the Cinema Club of San Francisco, held at the Women's City Club, included: "Missions of California," by Felix McGuire; "Mysteries of Plant Life," and "Seashore Oddities," through courtesy of Standard Oil Co.; "Tournament of Roses," by Lou Perrin; and "Mammoth Lakes Country," by Ed Sargeant.

## Long Beach Cinema

Annual installation dinner dance of Long Beach Cinema Club was held at Masonic Temple, Long Beach, Calif., on evening of January 10th, with Julian Hiatt installing the following officers: Bruce Ramsey, president; Howard Derr, first vice president; Joseph Stocklasa, second vice president; Warren Nash, secretary; and Reuben Eubank, treasurer.

Winners in the annual club contest were: Forrest Kellogg, first in 16 mm. general class with "Yellowstone"; Leonard Graham, winner in 16 mm. scenario class with "Shining Star"; Warren Nash, first in 8 mm. general class with "Timberline Trails"; and Jack Lloyd, first in 8 mm. scenario division with "Shining Star." Kellogg was presented with the Past President's Trophy by Warren Nash for greatest achievement during 1947 for his prize winner, "Yellowstone," and two other outstanding pictures of the year.

## Philadelphia Cinema

Regular monthly meeting of Philadelphia Cinema Club was held on February 10th at the Franklin Institute, with the U. S. Signal Corps film, "The Stilwell Road," highlighting the film program. In addition, "The Family Album," from General Electric, was shown.

At a recent meeting, Dr. Eduard Cherieg of Paris, representing the Amateur Cinema Group of France, was a guest. He disclosed that the amateur clubs of France publish their own magazine under title of Cinema d'Amateur Francais; and then exhibited one of his own movies in color.

## New York Metropolitan

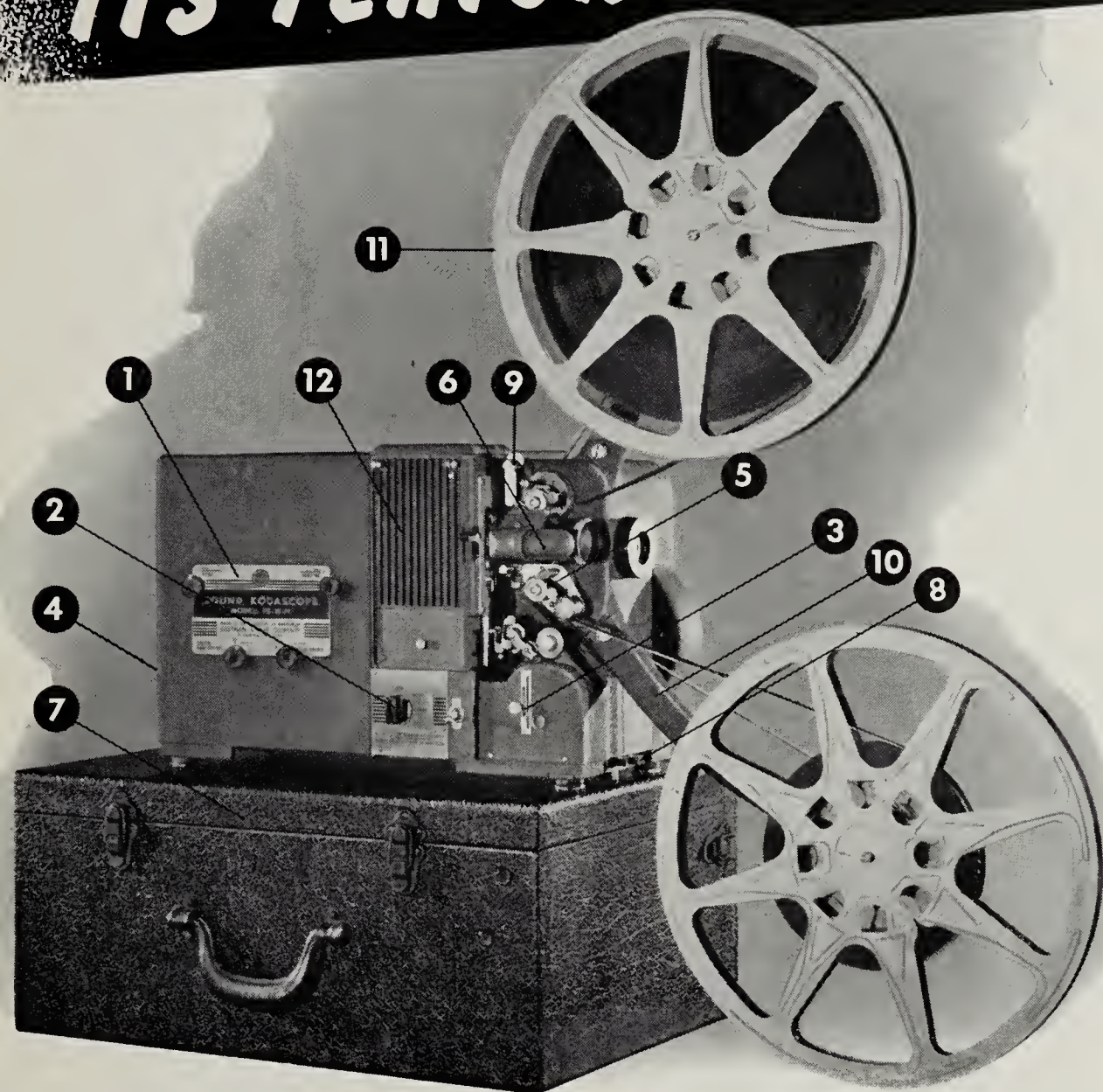
Films for the 1948 novice contest were screened for members' voting at the February 19th meeting of the Metropolitan Motion Picture Club of New York City, held at the Hotel Pennsylvania. Fourteen entries were received, including two from new members. Prizes of \$50, \$30, and \$20 were donated by Harry Groedel.

## Picture America

According to a survey of foreign tourist preferences made by Thos. Cook & Son, the famous travel agency, shopping for cameras is one of the most popular activities when foreigners reach the United States. With their cameras, the agency says, visitors like to make records of the "Seven Wonder Areas" in the United States. These areas aren't necessarily scenic or part of our national park system. They are: The cities of New York, Washington, Boston, Detroit, Chicago, San Francisco, and Los Angeles.



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# "AMERICANS AT HOME"

## Documentary Series In Color

By CHARLES LORING

THE documentary film has not yet come into its own in America. As a nation of scurrying extroverts, we rely almost entirely upon the newspaper headline (with its adjacent comic strips) and the radio newscast (with its companion "soap operas") to keep us in touch with the social issues of modern life. The documentary film, on the other hand, despite its limitless potentiality as a medium of graphic journalism, has been more or less ignored. It is true that the "March of Time" and "This Is America" series have been very well received by the theatre-going public, along with a few documentary masterpieces like "The River" and "The Plow That Broke the Plains"—but, by and large, we have lagged far behind England and other European countries in the production of films designed to help us know ourselves better as a nation.

This being the case, it is particularly significant that there is now being released under the general title of "Americans at Home" a series of top-notch 16 mm. color documentary films worthy to be seen and appreciated by every citizen of these 48 states. The series, produced for the Ford Motor Company by Transfilm, Incorporated, consists of three subjects:

"Men of Gloucester," "Pueblo Boy," and "Southern Highlanders."

"Americans at Home" was conceived as a public service project, with the assumption that the average American is interested in knowing more about himself and his neighbors. It sought to point out that the "American Way of Life" is not a single standardized set of *mores*, but actually *many* ways of life which vary widely with the geographical location, ancestry and provincial customs of the many separate groups of citizens who make up a united America. It aimed to show that within our national borders are ethnic groups whose cultures, customs, and even languages are so different that they might very well exist on separate continents, and yet they are Americans all—and it is their very differences that form the basis of our strength and vigor as a nation.

### Before the Cameras Turned

The most difficult problem in planning such a series of films was that of *selectivity*. During the initial story conferences, everyone with a hand in the production came up with suggestions naming this or that "interesting" village, town, city or region as being especially film-worthy. In order to narrow the field down

to practical limits, each proposed subject was analyzed from the triple viewpoint of geography, history and people. Of the three, *people* was deemed most important, and so it was decided that even the most spectacular environment should be subordinated to the human element within it.

The locales chosen for the first three films in the series varied widely in geography, but were quite similar in other respects. Gloucester, the Southern Highlands, and the Rio Grande country of the Pueblo Indians had in common interesting scenery, people and customs—but more than that, each had its roots in early American history. The Indians, of course, were centuries ahead of the others, but Gloucester was founded in 1610, and the Highlands of the South were settled in 1750.

Research was of prime importance in the scripting of the three films, and in each case the story line evolved only after extensive "on the spot" investigation of the subject. The director and writer spent two weeks in Gloucester together—where the writer interviewed nearly 100 individuals informally, listening to colloquial speech, sounding out local institutions, learning the techniques of commercial



(Left), Cameraman Willard Vogel and Director Lawrence Madison (seated at right) line up a scene in the Gloucester shipyards for the colorful documentary, "Men of Gloucester." At right the camera frames a shot of a Gloucester fishing schooner. Highpoint of the film is a stirring camera account of a mackerel fishing excursion. Skillfully written narration and musical score add materially to audience interest.



fishing plus the nature of life aboard a fishing boat, and even delving into local politics. The director combed the streets of the town, roamed the shoreline, and clambered over wooden boats and wharfs in search of interesting character types and camera angles.

Back at their respective desks, writer and director then compared notes and exchanged ideas so that both were thoroughly acquainted with the possibilities as well as the problems presented by the location. From these conferences and their combined notes, the writer prepared a 10,000 word summary of impressions to be used as a working basis for the shooting script. This procedure proved so satisfactory, that it was repeated in the preparation of the *Pueblo* and *Southern Highlanders* films.

### "Men of Gloucester"

Gloucester, Massachusetts, the locale of the first film produced for the series, is a colorful town located on an island known as Cape Ann, a few miles north of Boston. It is built on a series of hills surrounding an excellent harbor, and fishing is its main industry. Each year, the town's 250 vessels bring in a catch of 200,000,000 pounds of fish for the tables of America.

Against this surf-washed backdrop, "Men of Gloucester" tells a simple story of salty, rugged folk who draw their sustenance from the sea. By means of dramatic *first person* narration and camera treatment, we see the town as it looks to a native son returning after an absence of many years. There is a quality of nostalgic reminiscence to the film as it portrays the everyday lives of the fishermen. We are lulled by the charm of the sleepy little village; we are stimulated by the vig-

orous sweep of a mackerel fishing excursion; we wait in dreadful suspense with the wives on shore for the men to come back from the storm-tossed sea; we roister about in the gaiety of the St. Peter's Festival as the fisherfolk pay homage to their patron saint. It is all very colorful and very moving and very *American*.

The filming of "Gloucester" gave rise to a number of photographic problems, not the least of which was the shooting of the interior of a fish filleting plant showing cutters and packers at work. Lights had to be suspended from plumbing near the ceiling, cable lay in several inches of slimy fish gurry, and the camera tripod had to be set up on a slippery platform with the legs straddling the conveyor belt which carried a stream of redfish to the cutting tables.

The usual talent problems arose in the handling of the non-professional cast of "actors." During filming of the St. Peter's Festival parade, a certain small but highly energized youngster kept tagging along with the camera, running in and out of every scene and generally complicating matters. Along the parade route, one of the crew dropped into a soda fountain, deposited a dollar with the proprietor, and instructed him to dole out nickels in the form of ice cream cones to a certain little monster who would be brought into the place in the next five minutes. The lad was produced and the parade was shot in peace. The dollar was charged off to "Talent fees."

Several difficult problems were encountered during the filming of the mackerel fishing sequence, which is the dramatic highpoint of the film. First was the unalterable fact that the camera crew was vulnerable to sea-sickness. Then, too, the *Santa Maria's* sleeping facilities were

taxed to capacity by her complement of sailors and fishermen, so that the camera crew had to sleep on the galley deck, on the mess tables and in the pilot house, snatching forty winks when they really needed sound rest.

Weather conditions compelled the film crew to make four consecutive trips on the *Santa Maria* in order to complete the job. On the first trip, the ship plowed through a rough sea all night and by daylight was moving in a thick fog. The lookout spotted mackerel through the murky light of dawn, and a limit catch was aboard before the fog lifted. The footage shot on that trip added up to exactly *zero*. Storms and heavy seas also cancelled the second try for the cameramen, although the trip was otherwise successful.

Most of the usable footage for the sequence was recorded on the third trip. The rolling of the boat in swells gave the cameraman horizon trouble, and an assistant who prowled around the *Santa Maria* in a dory got some dizzying effects with a hand-held camera. The cameraman, minus his crew, went along on the fourth voyage to get the remaining fill-in shots. During the brief period when the ship's crew was actually hauling in a catch of mackerel, the pace was so fast that there was no chance for re-enactment or retakes. The cameraman had his exposure meter in almost constant use, wrestling with the ever-changing light and the highlights on the ocean's surface which produced areas of contrast far beyond the latitude of the Kodachrome emulsion. Spray from the crashing waves proved another serious handicap for the camera crew.

### "Pueblo Boy"

While shooting sequences for the sec-



(Left), Vivian, an aged Pueblo Indian, explains to Moses, his young son, the lore of the mystic Hoop Dance in a scene from "Pueblo Boy." (Right), Rugged New England fishermen haul in a net full of fish as part of the action of "Men of Gloucester." Both films are units of the "Americans at Home" series, a group of 16mm. color documentary films produced for the Ford Motor Company by Transfilm, Incorporated.



ond film in the series, the Transfilm camera crew worked in villages of the Pueblo Indians scattered throughout the Rio Grande Valley of New Mexico. Here the most ticklish problem was one of diplomacy, and the crew constantly faced the possibility of losing native friends and incurring the wrath of their village neighbors by making an indiscreet shot. Certain buildings and grounds of each village are held sacred in Pueblo spirit worship, and the filming of such sanctuaries would have been a serious violation of spiritual law. The director, somewhat hindered by language difficulties, went out of his way to explain his cinematic intentions to the pueblo authorities before shooting each sequence.

It was difficult at first to get the complete co-operation of the Indians due to the fact that they were used to Hollywood production companies whose budgets permitted higher gratuities than those offered by a documentary budget. There was a good deal of discussion about *vampum* before the *peace-pipe* was finally passed.

Briefly outlined, the story of "Pueblo Boy" deals with Vivian, an aged Indian who is instructing his young son, Moses, in the customs of the Pueblo tribe. There are flashbacks into the historical lore of the tribe, interesting shots of the Pueblo architecture, and a colorful sequence of the ritual Hoop Dance. The climax of the film shows the young boy dancing in the street parade of the annual Indian Ceremonial Festival at Gallup, New Mexico.

The extreme desert heat made the shooting of "Pueblo Boy" very difficult for cast and crew alike. Repeated *takes* under the hot sun sometimes caused sit-down strikes among the actors, but breaks for cold soft drinks nearly always resulted in a perfect take. An ice chest full of soda pop was standard equipment during shooting.

Moses, the young boy in the film, was quietly temperamental, as actors go. He had never been away from home, however, and the prospect of going to the Gallup Festival to dance in the street parade fascinated him. Reminders of this promised treat often drew his co-operation when it seemed that he was about to "walk off the set." During the filming of one sequence in the ruins of an abandoned pueblo, the boy was directed to walk through a honeycomb of crumbled adobe cells about three feet high, which symbolized his ancient heritage. Young Moses wasn't much interested in acting that afternoon, and he ad-libbed little side-trips from the charted walk-on, making things very difficult for the director.

After many retakes on the scene, cast and crew took a break for soda pop—and when shooting was resumed, the boy was nowhere to be found. The director scanned the ruins and estimated that there

were possibly 140 separate adobe cells in the area, each big enough to conceal a crouching eight-year-old lead player. The crew searched through 95 of the cells before they found Moses pouting in the 96th. It took a piece of hard western silver and an extra round of soda pop to get the "star" back onto the set.

A particularly interesting feature of "Pueblo Boy" is its musical score which features authentic Pueblo chants recorded on the spot by means of a Fairchild recorder. The gasoline-powered generator towed onto the desert to operate the recorder had to be carefully maneuvered downwind of the microphone, or tucked into a cave or behind a knoll so that the noise of the motor would not be picked up. There was the added problem of keeping powdery desert dust and sand out of the delicate sound and camera equipment. Light conditions were generally brilliant, but a clear sky often filled with enormous cumulus clouds in a matter of seconds, forcing the camera crew to grab shots "between clouds."

### "Southern Highlanders"

In order to secure authentic footage for a film document of America's hill folk, it was necessary to send a camera crew into the most remote mountain villages of North Carolina, where the natives still sing the Elizabethan ballads of their ancestors and speak somewhat the same dialect of English.

Getting from location to location over sketchy mountain trails with a heavily-laden camera truck was a major problem, as was the lighting of interiors in backwoods schools, churches and homes. In one instance, the local utilities co-op strung a 220-volt circuit some 400 feet from the nearest transformer to the "set"—but with the battery of lights connected, the voltmeter wouldn't strain a point over 95 on either side of the stage-box. A compromise was reached by trimming both sides of the circuit and cutting some of the "length" out of the long shots.

The weather also conspired against the camera crew by serving up a prolonged rainy spell that coincided with the first ten days of the shooting schedule. Even on so-called "clear" days, an obstinate haze screened distant mountains from the lens and frustrated attempts to portray the mountain man against his incredibly punctuated background.

In order to get scenes of the mountain church singing, it was necessary for the director to go through the local "chain of command." He had to interview each of six deacons of the church, explaining the nature of the film to each and getting his approval before passing on to the next. The Sunday on which the shooting was done happened to be the Sunday for the regional minister's monthly visit, and he still owes the congregation a sermon.

Recording of the church singing as well

as of the old mountain ballads was accomplished by means of the Fairchild recorder.

### Behind the Production Scene

The professional finish of the "Americans at Home" series reflects the talents of a group of very able technicians. The series was produced by Walter Lowendahl, former assistant producer of M-G-M short subjects; and directed by Lawrence Madison, former director-cameraman with the O.W.I. film division. Director of Photography for the series was Willard Vogel, who was at one time on the M-G-M camera staff.

Burton Rowles, Jr., formerly of United Press, wrote the excellent scripts for all three films. Music for "Men of Gloucester" and "Southern Highlanders" was composed and recorded by Emil Velazco, while Robert Stringer arranged the interesting native musical score for "Pueblo Boy."

All three of the films were photographed principally with Cine Special equipment. Native songs, recorded on location with the Fairchild unit equipped with a synchronous motor, were later re-recorded onto film. The average shooting time on each location was a little over six weeks.

The "Americans at Home" series departs from the established concept of *commercial* films in that it does not plug the sponsor's product. Aside from a modest sponsor credit in the main and end presentation titles, plus an unobtrusive shot of a Ford car in each of the films, there is no suggestion of commercialism. This fact has enabled the series to be widely distributed in schools throughout the nation.

"Men of Gloucester" and "Pueblo Boy" received awards in the "Films of the World" Festival held recently at Chicago's Surf Theatre. The State Department has acquired distribution rights to "Gloucester" and is translating the sound track into 27 foreign languages. It was originally planned to edit one-reel versions of each subject for theatrical release in Technicolor, but the plan had to be shelved due to the difficulty in securing Technicolor print commitments.

The "Americans at Home" series is an exemplary project. It may well mark the beginning of a new era for the documentary film on the American screen.

### Anso Continues Expansion

Anso starts early production on an addition to its factory at Binghamton, N. Y. at cost of \$2,000,000, according to announcement of general manager E. Allan Williford. New plant, expected to be completed within six months, will allow for substantial increase in Anso production of color film.





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*From Bulletin of Amateur  
Movie Society of Milwaukee*

## RCA Victor Slide Projector

RCA Victor announces a new dual purpose slide film and 2x2 slide projector especially designed to give maximum simplicity and convenience of operation for classroom use. Low in price, the model employs neoprene rollers instead of sprockets to prevent film damage.

## B&H Official Tours

E. L. Schimmel, manager of International Division of Bell & Howell Company, is currently on tour of Central and South America contacting B&H agencies and dealer outlets in 18 countries. He will also make a general survey of the photographic markets for new products in the area.

## ANFA Convention Set for New York, April 22-24

Eighth annual convention of Allied Non-Theatrical Film Association will be held at the Hotel New Yorker, New York City, April 22 to 24th. Jointly with the convention, the third annual 16 mm. industry trade show will be held at the same hotel to feature the latest products and developments in 16 mm. equipment.

## B&L Official Honored

George G. Tschume, manager of photographic lens sales for Bausch & Lomb Optical Company, has been elected first vice president of the American Society of Photogrammetry. Term of office is for one year, after which Tschume will automatically move up to the presidency.

## Kodak's Cornell Passes

Stephen B. Cornell, 74, chairman of the board of Canadian Kodak Co. Ltd., died at his Toronto home on February 1st. He had been associated with the Eastman organization more than 49 years, 38 of them with the Canadian company.

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# New Headquarters for S.O.S. Cinema Supply

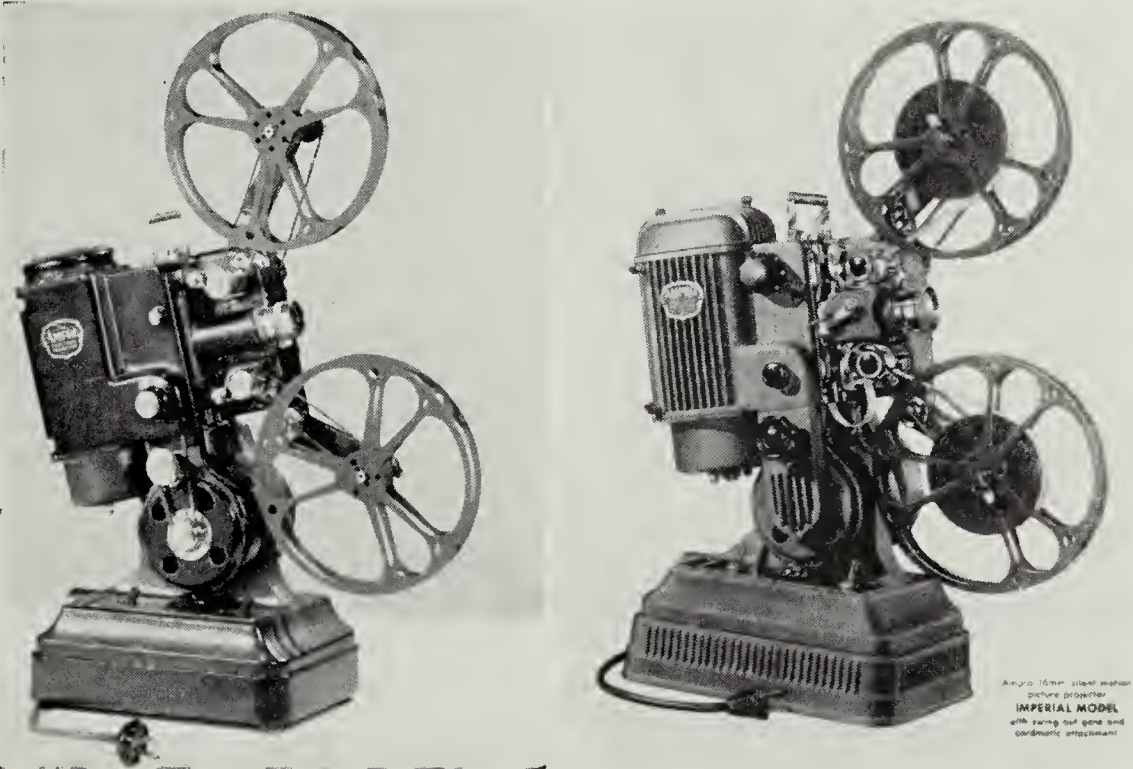
Celebrating the 22nd year of successful operation, S. O. S. Cinema Supply Corporation moves into its own building at 602 West 52nd Street, New York City, on March 1st. The new structure extends through an entire city block, and includes most modern design and appointments for a photographic supply house.

Showroom area of 2,000 square feet has skylight and fenesta windows to assure adequate daylight lighting, while four continuous strips of double 40 watt fluorescents provide night illumination. The shop and factory division on the third floor houses a sound proofed Electronic Laboratory which will be devoted, in part, to theatre television and advanced recording techniques. The new location is but a few minutes to midtown New York and the studios. S. O. S. maintains its warehouse at 529 West 28th Street, and the chair factory at Irvington, N. J.

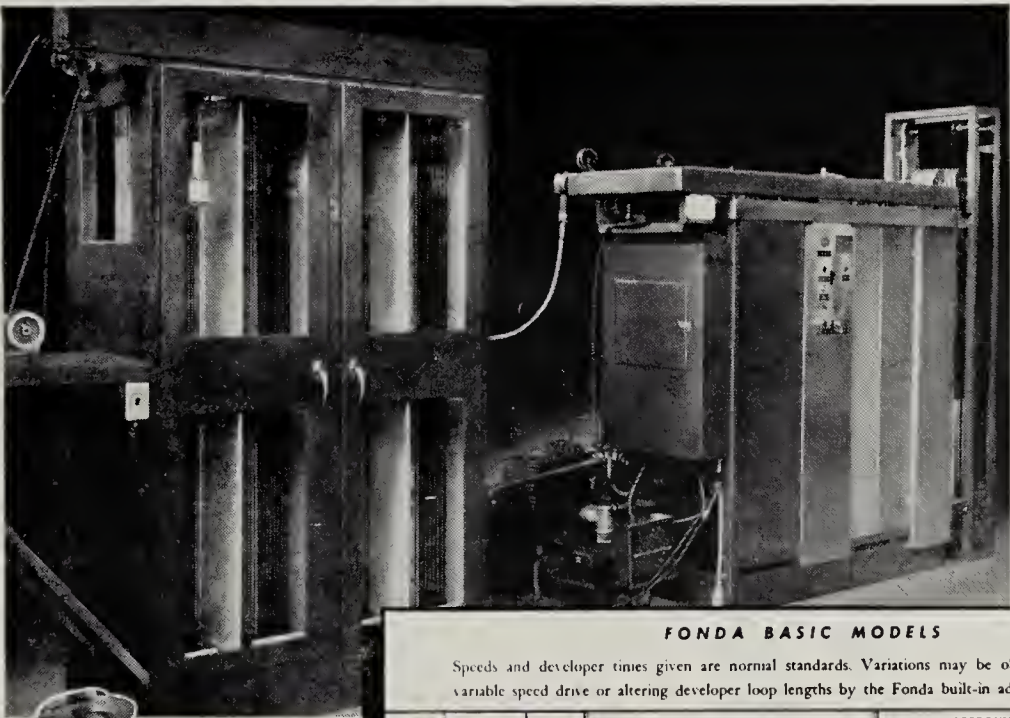
# Kodak's Billings Retires

Erle M. Billings, advisor of Eastman Kodak's business and technical personnel department, and widely known in the chemical profession through his prominent service with the American Chemical Society, has retired after 30 years with Kodak.

# THE FIRST—AND THE LATEST



At left, is illustration of the first Ampro precision 16 mm. projector model made, a B-1,000, which was recently returned for service to the Ampro factory by Robert Carter of Chicago. Carter purchased the machine 18 years ago, and it never required repair or adjustment except for periodic oiling and lamp replacement. The original Ampro 16 mm. projector retailed for \$150; while the new Ampro "Imperial" at right—which utilizes the same basic physical principles of the original model—sells for \$276.



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FONDA BASIC MODELS

Speeds and developer times given are normal standards. Variations may be obtained by adjusting variable speed drive or altering developer loop lengths by the Fonda built-in adjustment mechanism.

FILM TYPE	FILM SIZE	MODEL NO.	APPROXIMATE OPERATING SPEEDS			APPROXIMATE MACHINE SIZES Includes Feed Elev. & Work Tables Both Ends					
			Positive 4 Min. Dev.	Negative 9 Min. Dev.	Reversal 4 Min. 1st. Dev. 6 Min. 2nd Dev.	WET END			DRY END		
						Length	Width	Reqd. Ceiling	Length	Width	Height
Negative	16 mm.	F. 1012 F. 1021		29 fpm 58		6½ ft. 9	3 ft. 3	12 ft. 12	5 ft. 7	3 ft. 3	7 ft. 7
	16/35 mm.	F. 3008 F. 3018		17 34		6½ 9	3 3	12 12	5 7	3 3	7 7
Positive and Negative	16 mm.	F. 1011 F. 1014	65 fpm 131	29 58		9 13	3 3	12 12	7 9	3 3	7 7
	16/35 mm.	F. 3017 F. 3002	39 78	17 34		9 13	3 3	12 12	7 9	3 3	7 7
Reversal	16 mm.	F. 1008	44	29	44 fpm	13	3	12	5	3	7
	16/35 mm.	F. 3016	26	17	26	13	3	12	5	3	7
			Microfilm 3½ Min. Dev.		Anso Color 12 Min. 1st. Dev. 15 Min. Color Dev.						
Microfilm	16 mm.	F. 1020	75 fpm			9½	3	12	7	3	7
	16/35 mm.	F. 3015	44			9½	3	12	7	3	7
Anso Color	16 mm.	F. 1009 F. 1002			43 fpm 87	16 26	3 3	12 12	5 7	3 3	7 7
	16/35 mm.	F. 3013 F. 3004			26 52	16 26	3 3	12 12	5 7	3 3	7 7



## New Light Source

(Continued from Page 89)

120 volts direct current. Finished models of these lamps with housings designed for them will operate directly on present set power lines. A momentary starting higher voltage impulse may be used to strike the arc, which will then be ballasted by a simple lightweight resistance. The lamp will be up to full brilliancy in a few minutes or it may stand by on a small fraction of its normal current, kept hot by a thermally insulated housing and light-proof door. In this condition it will be ready

for almost instant service upon the application of full voltage.

Mercury lamps operated on alternating current have a cyclic flicker. On direct current the lamps are stable, producing a light output as constant as the voltage. Small voltage fluctuations produce only minor changes in light output and have no appreciable effect on lamp life or color. With the addition of a magnetic device to control the position of the "arc flame" rising above the arc, due to connection currents within the bulb, the lamp can be operated in studio spotlights tilted to any normal angle.

Mercury arc ultraviolet radiations, like those of carbon arcs, can cause sunburn or conjunctivitis. The ultraviolet radiations from these sources will be absorbed and rendered harmless by the glass lenses and housings, such as conventionally used. Also, since we know the operating interior pressure of the vapor within the bulb is high, we must consider the hazards of quartz bulb failure. Such housings as will be used to insulate the unit thermally and provide the outer housing, apparently will serve as protection in such cases.

As before mentioned, the light from this lamp seems adaptable to Technicolor, Kodachrome, Dufay-Color, Ansco-Color, and others, and is also quite suited to a favorable balance of grays in terms of luminosity. These lamps have been used with complete success in the black and white film production, "The Crowthers of Bankdam," by Archibald Nettleford Studios in England.

It seems quite likely that this source will find other uses than set lighting or television studio lighting, such as film printing and the larger sizes in background projection work. It should be a natural for some types of cloud projection.

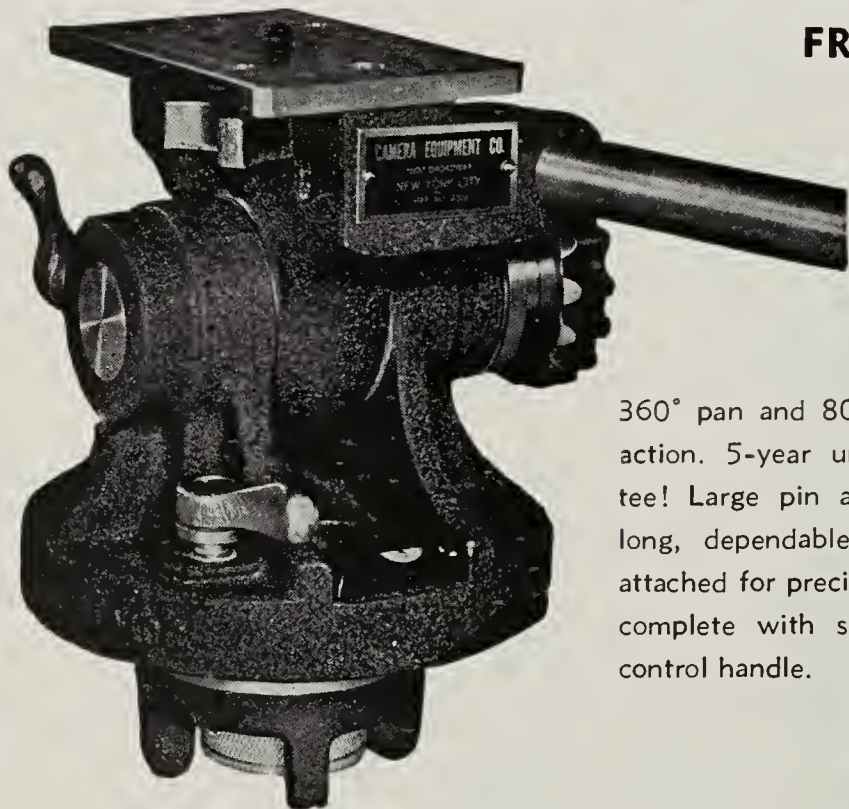
It is difficult to speculate as to the future possibilities of this compact source lamp, but it seems inevitable that it will play a prominent part in the motion picture and television industries in the years to come. Of course, this new development brings with it new problems. For example, everything at this time indicates a much higher unit cost of light source than has been previously considered by the studios. On the other hand, the relatively long life which seems possible, the high output per source, the simplicity of operation, and savings in production costs by elimination of delays probably will result in economic advantages which will cause it to compare favorably with other illuminants. It is expected that intensive development work now in progress here will provide an early opportunity for a comprehensive study and trial in American studios.

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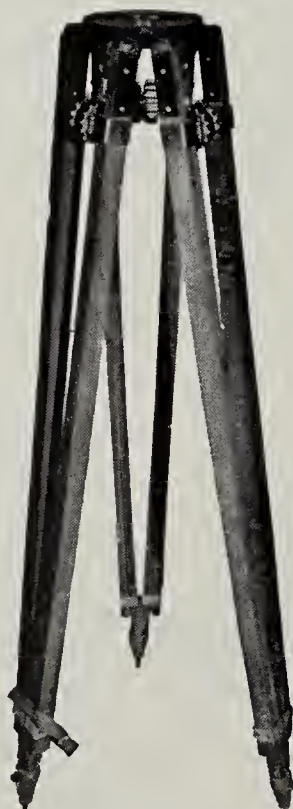
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## Trucolor Process

(Continued from Page 79)

without loss; automatic print uniformity; and unimpaired sound reproduction.

Further, the color rendition is pleasing for the general theatre audience. However, being a two-component process, it is not possible to reproduce all of the colors faithfully, or to the extent that can be accomplished with a three-color method. Some colors—such as red, blue, brown, light greens, pink, and silver—reproduce almost perfectly; while others—such as yellow and purple—are distorted. But careful planning of sets and costumes can obtain the most value in color from the process with limited distortions. Flesh tones are particularly successful in the Trucolor system.

### Production at Republic Studios

With both emulsions and the Trucolor method being constantly improved, and with specially trained technicians only available at Republic studios at this time, all productions made in Trucolor will have to be photographed at the Republic studios. However, although Republic will produce and release a number of its own features in the Trucolor system, the other producers will not necessarily have to use the distributing facilities of Republic. Cost of prints in Trucolor is competitive with other present color methods, but Republic executives point out that production negative costs can be materially lowered with Trucolor, and medium priced features can have the advantages of color photography which has been generally denied such pictures.

Release prints can be supplied rapidly, and on the same schedule as regulation black-and-white prints, just as soon as the master print is okayed by the producer. As the two-color Trucolor method progresses with continual improvements in quality of color values, the Consolidated and Republic engineers expect that the addition of the third color will eventuate.

### New 'Photo Silver' Process By Eastman Kodak

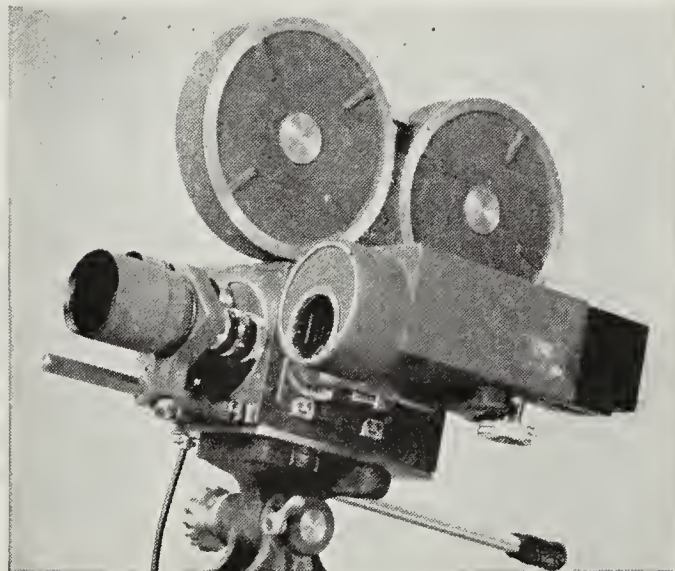
A new method of making silver nitrate crystals—keystone of all photography—has been perfected by Eastman Kodak. The improved process pumps the glistening white particles from a tank much as a threshing machine spews forth grain; replacing the previous slow method of producing crystals by evaporation in open porcelain dishes.

The silver, of which Kodak annually uses some 15,000,000 ounces, makes modern photography possible, as the silver nitrate crystals are combined with other chemicals and gelatin to make photographic emulsions.

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## Photographer to Director

(Continued from Page 84)

tected. One little light in the wrong place may put an actress back on main street in the chorus. Fortunately, this attitude toward photography and toward movie-making in general is gradually disappearing."

Tetzlaff's current production is his fourth directorial effort. He became a director in 1941 with "The Great Man Votes," starring John Barrymore. He has done "Riff Raff," a chase picture that was notable for its visual, camera approach (the first reel of the film was handled in almost silent screen technique without dialogue or even sound effects) and the soon-to-be-released "Fighting Father Dunne," starring Pat O'Brien in the title role of a priest who establishes a reception center for newsboys in St. Louis. In the latter, Tetzlaff eschewed camera effects to tell a simple story in the most unobtrusive and straightforward manner possible. But with "The Window" he is reverting to camera trickery, since the chase motif of the plot lends itself to that sort of treatment.

Based on a story by Cornell Woolrich, "The Boy Cried Murder," "The Window" has to do with a young boy given to exaggerated stories who witnesses a murder in a neighboring apartment, and the subsequent events as he tries to get someone

to believe him and track down the murderer. The picture is being filmed largely in an abandoned house on East 116th Street and on an exterior street on East 105th Street. Tetzlaff scouted numerous locations before deciding on these as the most vivid pictorially. The street has the Third Avenue elevated train in the background and the abandoned house was chosen for the view of New York obtainable from the upper windows and rooftop. "The Window" is being enacted by a Hollywood cast headed by Arthur Kennedy, Barbara Hale, Paul Stewart, Ruth Roman and Bobby Driscoll.

As a former cameraman, Tetzlaff holds that the visual aspect of moviemaking has not received sufficient attention in recent years. "The producers of motion pictures," he says, "have forgotten the technique of silent films when you had to speak with the camera and tell with pictures what people stand in the middle of the room and talk about today. There is entirely too much dialogue in pictures. The essential, visual principle of the screen is too often neglected. In 'The Window,' dialogue will be held to a minimum, sufficient to explain attitudes and the progression of the story. I worked with writer Mel Dinelli on the script, but much of the screenplay is being altered or thrown out of the window when it comes to actual shooting. It is impossible to plan a shooting script 100% in advance, since

much of the staging of a scene suggests itself on the actuality of the set."

Tetzlaff was born in Los Angeles 43 years ago and broke into pictures at the age of 17 as an assistant to late cameraman Sidney Wagner at Fox during the silent screen days. He photographed many of Frank Capra's early films, such as "Power of the Press," "The Younger Generation," "The Donovan Affair" and "Submarine," shot some of Paramount's top productions for seven years and recently functioned as photographer on "The Enchanted Cottage" and "Notorious." Today, as a director, Tetzlaff has his own director of cinematography, but he still retains a lifelong interest in the camera and its application to moviemaking, following the tradition of such cameraman-directors as Joseph von Sternberg, the late George Hill, Victor Fleming and George Stevens.

William Steiner, A.S.C., was Director of Photography for Tetzlaff on "The Window" in New York.

## New Photo Computer Eliminates Guesswork

Exposure problems of 35mm, 16mm, 8mm motion picture cameras and any still camera are readily and accurately solved in a moment's time with the pocket-size Photo Computer, newest item in the ever growing line of Bardwell & McAlister photographic equipment.

Filter factors, film emulsion speeds, increasing or decreasing camera speeds, shutter openings, motor speeds and lens diaphragm openings are just a few of the variables which are not only dependent on one another, but serve to alter the basic exposure. When several of these variables are introduced at the same time, the exposure problem may become quite complicated and lead to serious errors. The new Photo Computer provides a simple and sure method of making calculations rapidly without any mental mathematics on the part of the user.

The Photo Computer has also been provided with a lens calculator by which the depth of field for most standard lenses at various F Stops and focal distances may be quickly found. All data and computations, determined by the use of the Photo Computer, are accurate to within 1/4 of an F Stop.

Priced at \$3.95, the device is available at all leading camera stores, or factory direct. Additional information will be supplied by writing to Bardwell & McAlister, Inc., Dept. 24, Box 1310, Hollywood 28, California.

## Old Stuff

Thomas A. Edison not only invented movies, he introduced the commercial film as well. Records indicate that several of Edison's early films were sponsored commercially.

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## "Captain From Castile"

(Continued from Page 81)

longest shooting schedules in the history of the studio, with actual shooting requiring 106 days. Eighty-three of these (not including Sundays and holidays when the company did not shoot) were spent in Mexico by the Hollywood cast and crew of 205. The company arrived in Morelia by chartered planes and started shooting there on November 19. They worked in Morelia for six weeks, in Uruapan for five and in Acapulco for exactly one month.

Tyrone Power, a Marine Air Corps pilot during the war, flew his own plane for relaxation and gave various members of the company thrilling rides over the boiling volcano. On the day the unit moved from Uruapan to Acapulco (ordinarily a two-day trip), Power ran a shuttle air service and ferried about fifty members of the company to the new locale in the flying time of one hour and 20 minutes.

### A Cameraman's Jinxed Paradise

"Captain From Castile" was photographed in glowing Technicolor by Charles G. Clarke, A.S.C., and Arthur Arling, A.S.C. As a filming assignment it was a cameraman's dream—with undertones of a nightmare. The beautiful Mexican scenery and the colorful period and costumes of the story made an attractive combination upon which to train the camera's lens. On the other hand, shooting a film of such magnitude so far from the limitless facilities of the studio kept the cameramen at a constant disadvantage.

One of the principal headaches was the handling of Technicolor film under tropical shooting conditions. Three chests of carefully refrigerated color stock amounting to 150,000 feet were packed aboard the special train when it left for Mexico. This was but a fraction of the total film consumed, as several more shipments were made later. The chests were actually small refrigerators, six feet long and four feet wide. They were divided into compartments with ice and film alternating. From the photographic standpoint, one of the main problems had to do with the unusual amount of camera movement required. "The technical approach to 'Captain From Castile' had to be active, inasmuch as our story was one of action," Cinematographer Clarke points out, "The camera was very rarely still for compositional shots. The sweep of the action demanded that the camera be *panning* and moving most of the time."

Because of the historical nature of the film, an effort was made to keep the photographic approach thoroughly realistic. "The picture is really a kind of *documentary*," Clarke explains, "and we had to be

careful not to glorify the scenes just for the sake of pictorial beauty. Whenever the opportunity presented itself, the camera was used to produce a definite mood, such as in the scene on the beach at Acapulco between Tyrone Power and Thomas Gomez (who played the part of the priest). In this instance, the timing was so arranged that a beautiful pictorial effect was obtained by shooting the final scene just at sunset."

Variations in color temperature plagued the cameramen constantly. "The hardest job in exterior photography is keeping consecutive scenes consistent," Clarke says. "Quite often they may be shot hours or days apart, and the light naturally changes from hour to hour and day to day—not only in direction, but in color value."

The interiors of all the temples and huts were shot on location, with the temples proving especially difficult to shoot because of cramped lighting conditions and excessive heat. A definite mood was also sought in these interior scenes. In the prison sequence, for example, a stark cold feeling was expressed by suitable mood lighting.

The volcano Paricutin, which had reached a height of 3,000 feet, was especially active while the company was on location. It belched great clouds of smoke into the air, and even though the company was located several miles from the lava beds, the smoke frequently blotted out the sun's rays. When this occurred, the cameramen took advantage of the situation to shoot night scenes.

One of the most effective night shots in the picture was filmed in bright sunlight. This was the scene where the priest is seen kneeling in prayer in his hut and the Indian approaches to whisper that he has committed a murder. A huge blue filter, 10 by 12 feet in area was placed outside the hut to diffuse the sunlight and to create the illusion of night.

On the screen, "Captain From Castile" is a colorful pageant of historical action. The casual moviegoer, absorbed in the romance of the story, will hardly suspect that behind these stirring scenes is the equally interesting story of a full-scale "Safari South of the Border."

## Scroll Title for Kodachrome

To assist amateur movie makers in providing a professional appearance to their home movies with titles which have a smart and modern touch, Eastman Kodak has announced that it is now set up to film scroll titles for amateur movie makers on Kodachrome film. Scroll titles are those that literally seem to unroll on the screen. This service will be available through all Kodak dealers.

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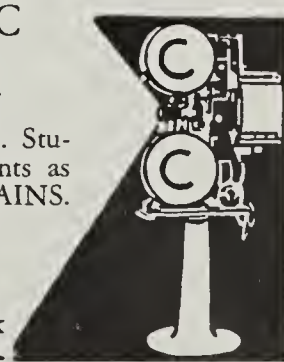
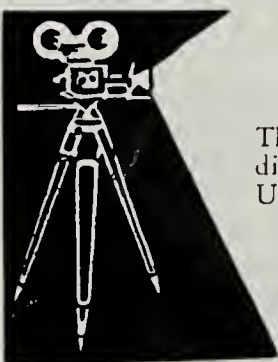
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# Current Assignments of A.S.C. Members

**M**EMBERS of the American Society of Cinematographers were engaged as Directors of Photography in the Hollywood studios during February as follows:

## Columbia

- William Snyder, "The Loves of Carmen," (Technicolor) with Rita Hayworth, Glenn Ford, Ron Randell, Victor Jory.
- Burnett Guffey, "Let's Fall in Love," with Dorothy Lamour, Don Ameche, Janis Carter, Willard Parker, Adele Jergens.
- Henry Freulich, "Wild Fury," with Preston Foster, William Bishop, Mary Stuart.
- Vincent Farrar, "I Surrender Dear," with Gloria Jean, David Street, Don McGuire.

## Eagle-Lion

- John Alton, "Hollow Triumph," with Paul Henreid, Joan Bennett.
- Stanley Cortez, "Let's Live a Little" (United California Prod.) with Hedy Lamarr, Robert Cummings.

## Independent

- Roy Hunt, "Mr. Joseph Young of Africa," (Arko Prod.) with Terry Moore, Ben Johnson, Robert Armstrong, Frank McHugh, Regis Toomey, Denis Green.
- Harry Wild, "The Pitfall," (Regal

Films) with Dick Powell, Elizabeth Scott, Jane Wyatt.

- George Robinson, "Blonde Ice," (Martin Mooney Prod.) with Leslie Brooks, Robert Paige, Russ Vincent, Walter Sande, John Holland, James Griffith.

## Metro-Goldwyn-Mayer

- Harry Stradling, "Easter Parade," (Technicolor) with Fred Astaire, Judy Garland, Peter Lawford, Ann Miller.
- Joseph Ruttenberg, "Julia Misbehaves," with Greer Garson, Walter Pidgeon, Peter Lawford, Elizabeth Taylor, Cesar Romero, Mary Boland, Dame May Whitty, Reginald Owen.
- Ray June, "A Southern Yankee," with Red Skelton, Brian Donlevy, Arlene Dahl.
- Robert Planck, "The Three Musketeers," (Technicolor) with Lana Turner, Gene Kelly, Van Heflin, June Allyson, Keenan Wynn, Frances Gifford, Vincent Price.

## Monogram

- William Sickner, "Kilroy On Deck," with Jackie Cooper, Jackie Coogan, Renee Godfrey, Robin Chandler, Curt Bois.
- Harry Neumann, "Thunder on the Range," with Johnny Mack Brown, Raymond Hatton, Reno Brown, Dennis Moore.
- Mack Stengler, "I Wouldn't Be in Your Shoes," with Don Castle, Elyse Knox, Regis Toomey, Charles D. Brown.
- William Sickner, "Murder By Alphabet," with Roland Winters, Deanie Best, John Alvin, Mantan Moreland.

## Paramount

- Charles Lang, Jr., "Foreign Affair," with Jean Arthur, Marlene Dietrich, John Lund, Millard Mitchell.
- Sol Polito, "Sorry, Wrong Number," (Hal Wallis Prod.) with Barbara Stanwyck, Burt Lancaster, Ann Richards.
- Daniel Fapp, "Abigail, Dear Heart," with Claude Rains, MacDonald Carey, Wanda Hendrix, Andrea King, Henry Hull.

## RKO

- George Barnes, "The Boy With Green Hair," with Pat O'Brien, Robert Ryan, Dean Stockwell, Barbara Hale.
- Nick Musuraca, "Blood on the Moon," with Robert Mitchum, Barbara Bel Geddes, Robert Preston, Walter Brennan, Frank Faylen.

## Twentieth Century-Fox

- Joe MacDonald, "Street With No Name," with Mark Stevens, Barbara Law-

rence, Lloyd Nolan, Richard Widmark, Ed Begley, Walter Greaza, Donald Buka.

- Harry Jackson, "Apartment For Peggy," (Technicolor) with Jeanne Crain, William Holden, Edmund Gwenn, Randy Stuart, Gene Nelson.

- Joe La Shelle, "For Fear of Little Men," with Tyrone Power, Anne Baxter, Cecil Kellaway, Lee J. Cobb, James Todd, J. M. Kerrigan.

## United Artists

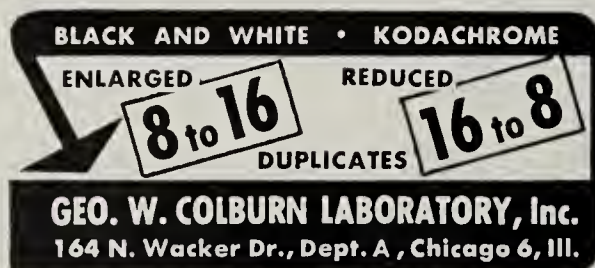
- William Mellor, "Texas, Brooklyn and Heaven," (Golden Prod.) with Guy Madison, Diana Lynn, James Dunn, Michael Chekhov, Florence Bates, Lionel Stander.

## Universal-International

- Russell Metty, "Mr. Peabody and the Mermaid," with William Powell, Ann Blyth, Irene Hervey, Andrea King, Millard Mitchell, Hugh French.
- Hal Mohr, "The Judge's Wife," with Fredric March, Edmond O'Brien, Florence Eldridge, Geraldine Brooks, Stanley Ridges.
- Milton Krasner, "The Saxon Charm," with Robert Montgomery, Susan Hayward, John Payne, Audrey Totter, Cara Williams, Sam Levene, Heather Angel, Harry Von Zell.
- Frank Planer, "One Touch of Venus," (Artists Alliance Prod.) with Robert Walker, Ava Gardner, Dick Haymes, Eve Arden, Olga San Juan, Hugh Herbert, Tom Conway.

## Warners

- Woody Bredell, "Don Juan," (Technicolor) with Errol Flynn, Viveca Lindfors, Robert Douglas, Romney Brent, Alan Hale, Jerry Austin, Robert Warwick, Joy Page, Helen Westcott, Mary Stuart.
- Karl Freund, "Key Largo," with Humphrey Bogart, Edward G. Robinson, Lauren Bacall, Lionel Barrymore, Claire Trevor, Thomas Gomez, Dan Seymour, Harry Lewis, John Rodney.
- Joe Valentine, "Rope," (Transatlantic Pictures) with James Stewart, John Dall, Farley Granger, Joan Chandler, Constance Collier, Edith Evanson, Richard Crane.
- Peverell Marley, "John Loves Mary," with Ronald Reagan, Jack Carson, Wayne Morris, Patricia Neal, Edward Arnold, Ernest Cossart.
- Carl Guthrie, "The Fighting Terror," with Wayne Morris, Lois Maxwell, Gordon MacRae, Mary Stuart, Jimmy Ames.
- Sid Hickox and Wilfrid Cline, "One Sunday Afternoon," (Technicolor) with Dennis Morgan, Janis Paige, Dorothy Malone, Done De Fore, Ben Blue, Dick Walsh.
- Ted McCord, "Dames Don't Talk," with Virginia Mayo, Brue Bennett, Robert Hutton, Tom D'Andrea, Richard Rover, Richard Benedict, Ben Weldon, Dick Walsh.
- Carl Guthrie, "One Last Fling," with Alexis Smith, Zachary Scott, Douglas Kennedy, Ann Doran, Ransom Sherman, Veda Ann Borg.





## 25 YEARS AGO

### With A.S.C. and Members

- David Abel just completed photography on the Fox production, "The Buster," with Doris Pawn and Dustin Farnum.
- Reginald Lyons was photographing thrill comedies for Joe Rock.
- Norbert Brodine was set to photograph Constance Talmadge in a Joseph Schenck production.
- George Barnes was signed to photograph a Louis Burston all star feature directed by Rowland V. Lee.
- Max Du Pont was busy handling camera work on "The Tinsel Harvest" for director William Seiter.
- L. Guy Wilky was assigned to photograph "Grumpy," William de Mille production for Paramount.
- Homer Scott was set to handle photography on "Main Street" at Warners.
- Ben Kline was filming the Universal production, "Jewel," directed by Lois Weber.
- Ross Fisher was shooting Emory Johnson's "Westbound 99" at Robertson-Cole.

### BEN REYNOLDS, A. S. C.

Ben Reynolds, who first joined the American Society of Cinematographers in 1921, passed away on February 14th after an extended illness.

He received early experience in motion picture photography at the Essanay studios more than 30 years ago, and then joined Universal for an extended period, during which time he photographed many big productions, including "Blind Husbands" and "Foolish Wives." After a few years with Warners to photograph a number of early talking pictures, he became associated with Paramount until he retired due to ill health in 1938.

• Charles Schoenbaum was at Paramount in charge of cameras for "Mr. Billings Spends His Dime," with Walter Hiers starred.

• Frank B. Good had just completed photography on the Jackie Coogan starrer, "Toby Tyler."

• Sol Polito just returned from New York to photograph an Edwin Carewe production in Hollywood.

• John Arnold was photographing Viola Dana in "Her Fatal Millions" at Metro.

• Charles Van Enger was associated with Fred Niblo productions as photographer on "The Famous Mrs. Fair."

• W. S. Smith just returned from San Francisco, where he shot a Vitagraph production featuring Earle Williams and Alice Calhoun.

• Victor Milner was filming a Gladys Walton starrer at Universal, with King Baggot directing.

• Karl Brown was winding up his chores as head cameraman on "The Covered Wagon," James Cruze production at Paramount.

• Bert Cann was in Europe, attached to the staff of Eddie Polo.

• Rene Guissart was in England, photographing "Paddy, the Next Best Thing," a Wilcox production starring Mae Marsh.

• Henry Sharp was photographing Mae MacAvoy in "News."

• Harry Perry, on the camera staff of Preferred Pictures, was elected a member of A.S.C.

• At Universal, camera assignments included: Charles Stumar on "Flesh," Allan Davey on "The Attic of Felix Bavu," and William Fildew on "Drifting."

• Ross Fisher was in charge of camera work for "The Greatest Menace" at Fine Arts Studios.

• Joseph Brotherton was preparing for the start of the Katherine MacDonald starrer, "Refuge."

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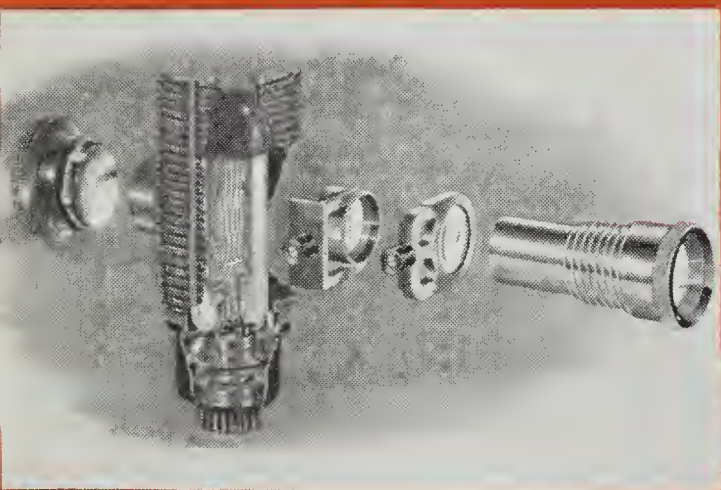
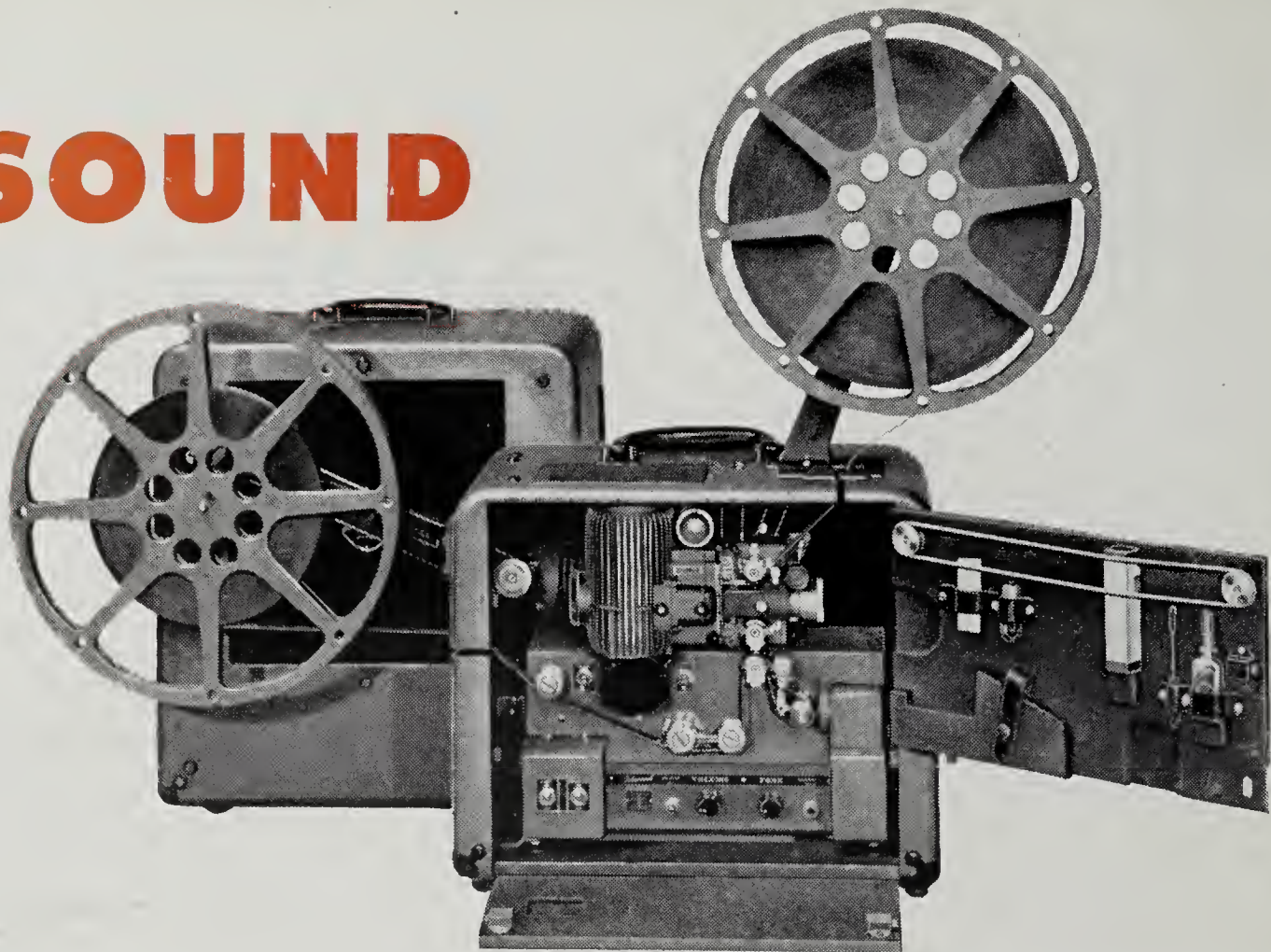
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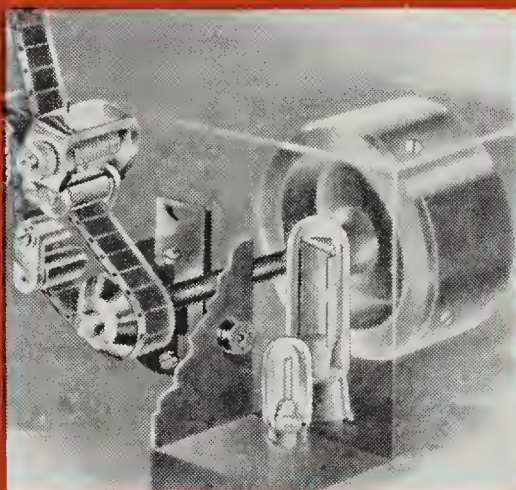


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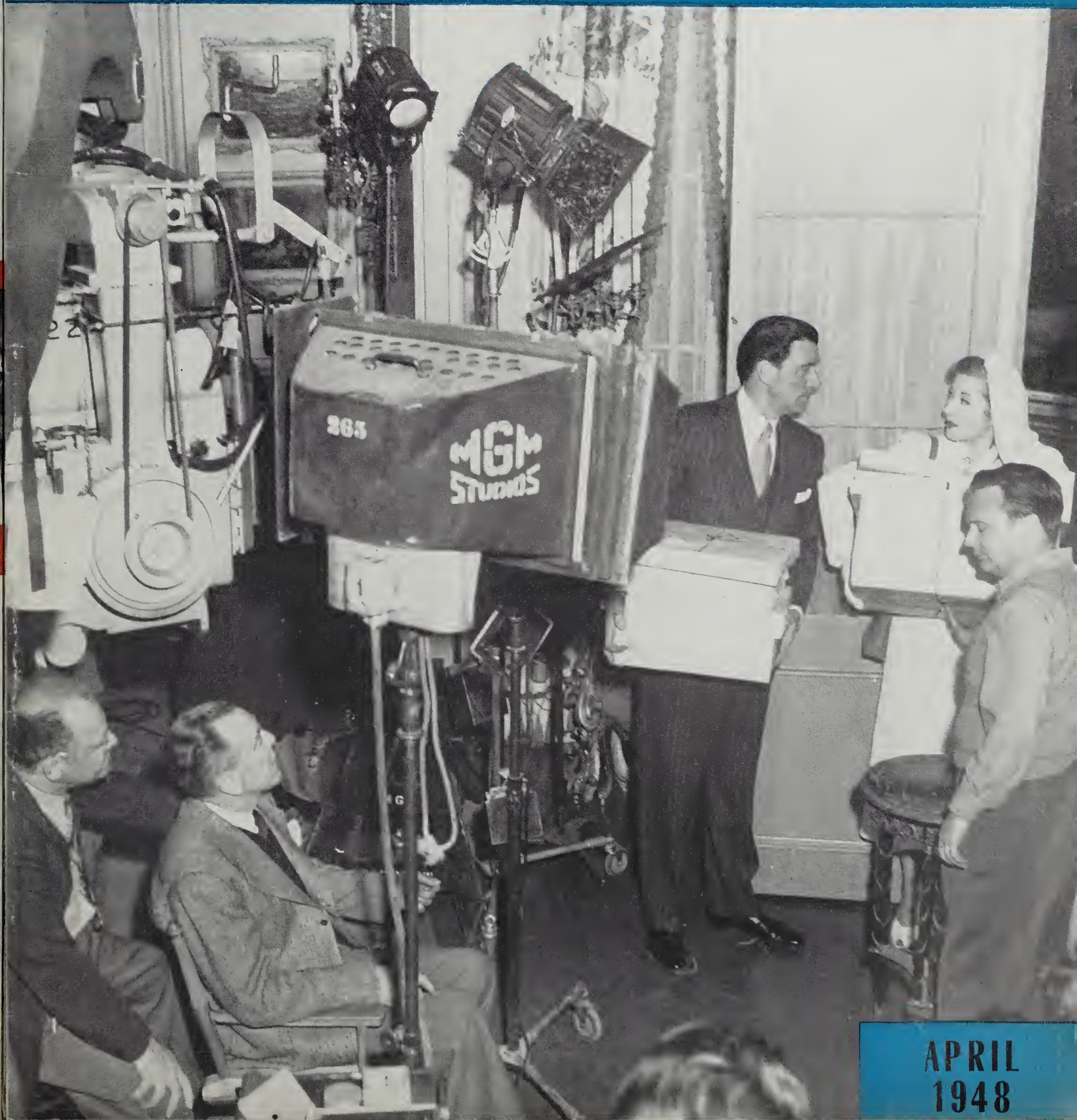
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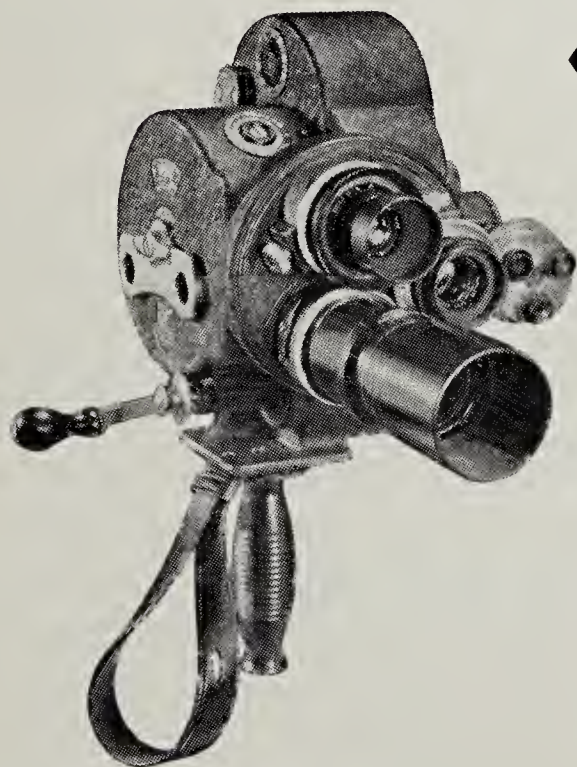
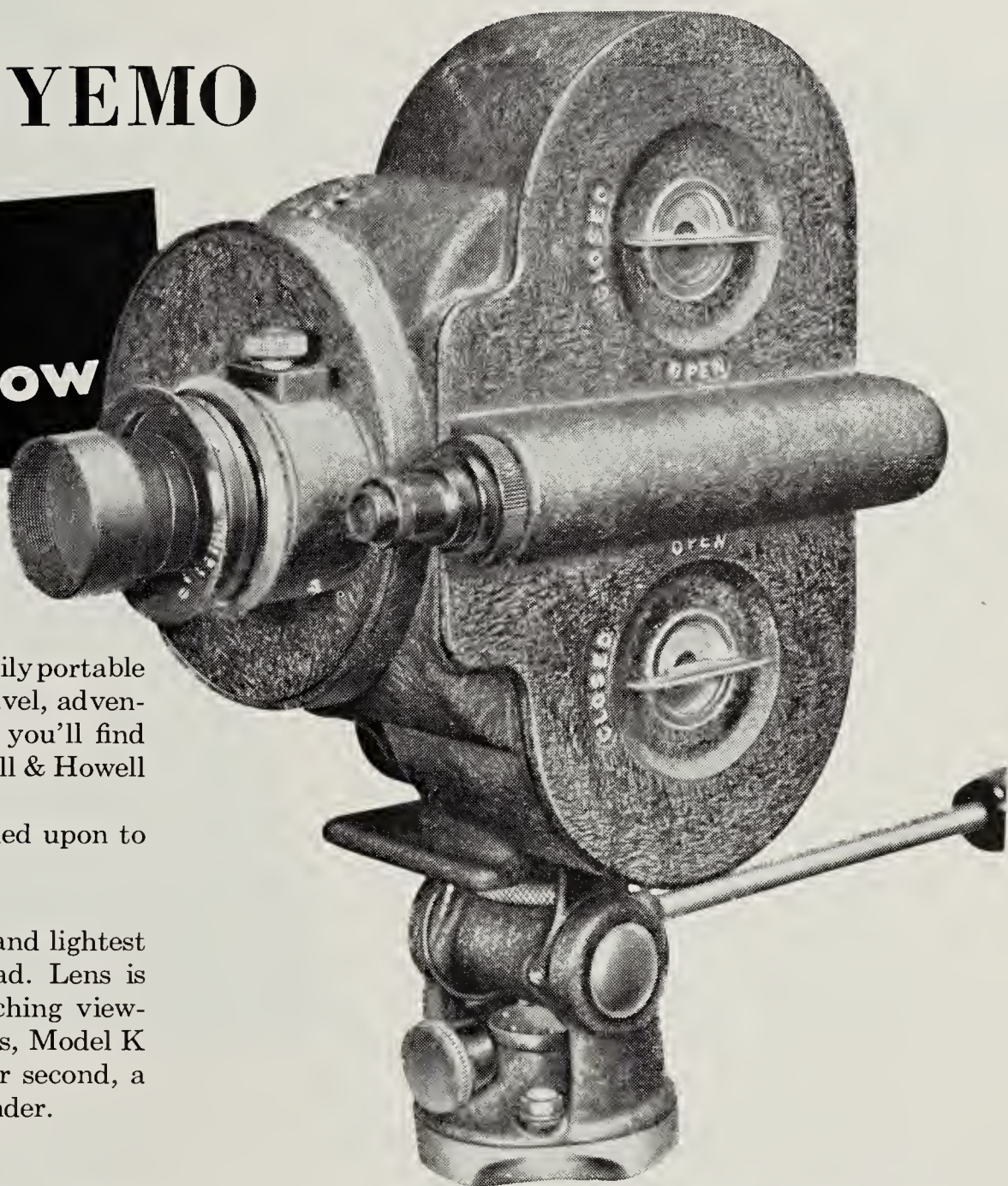
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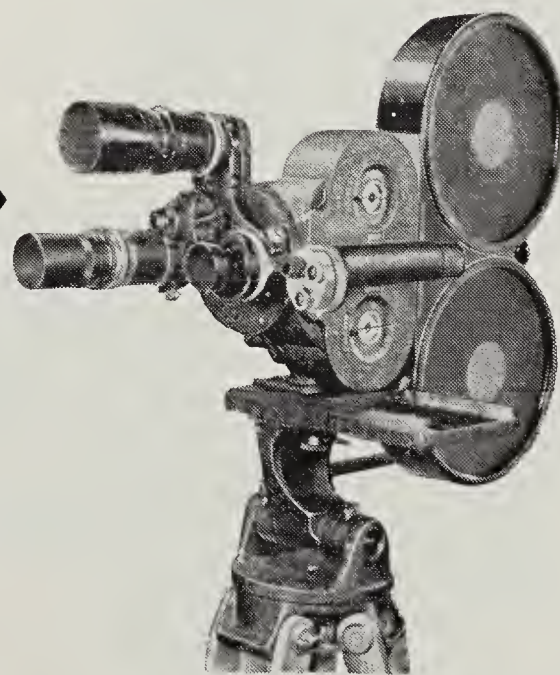


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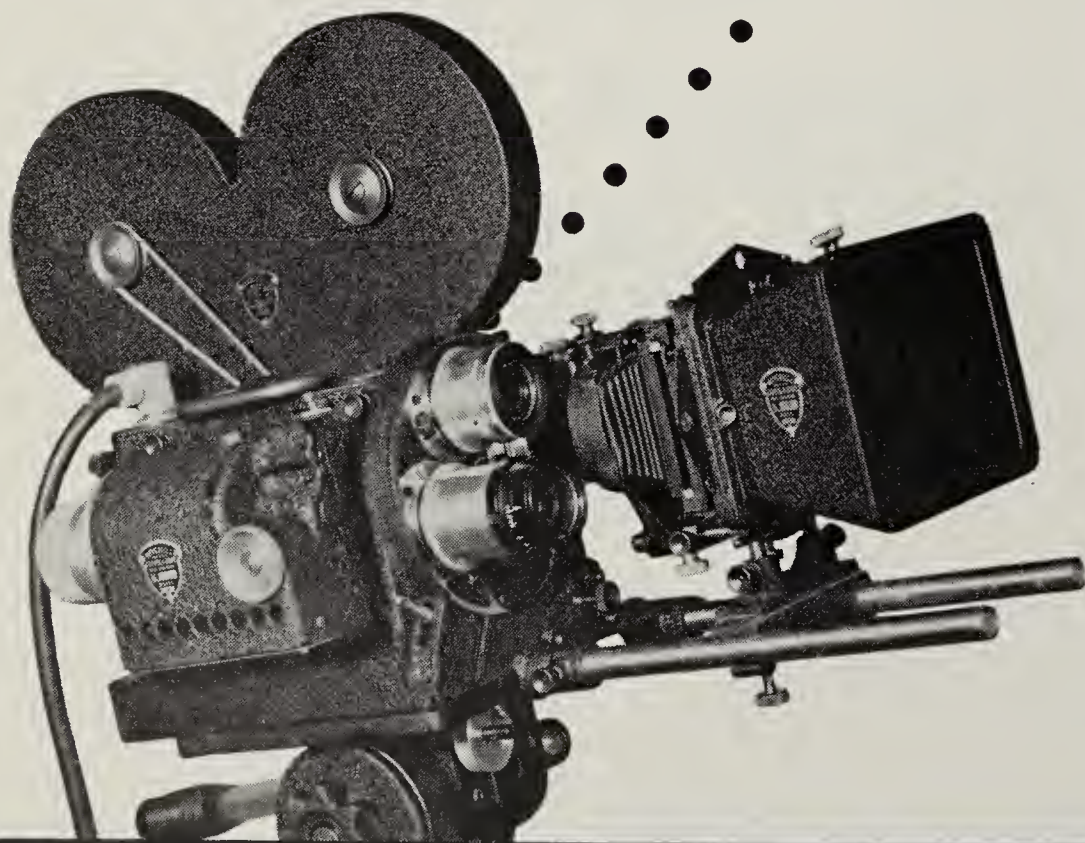
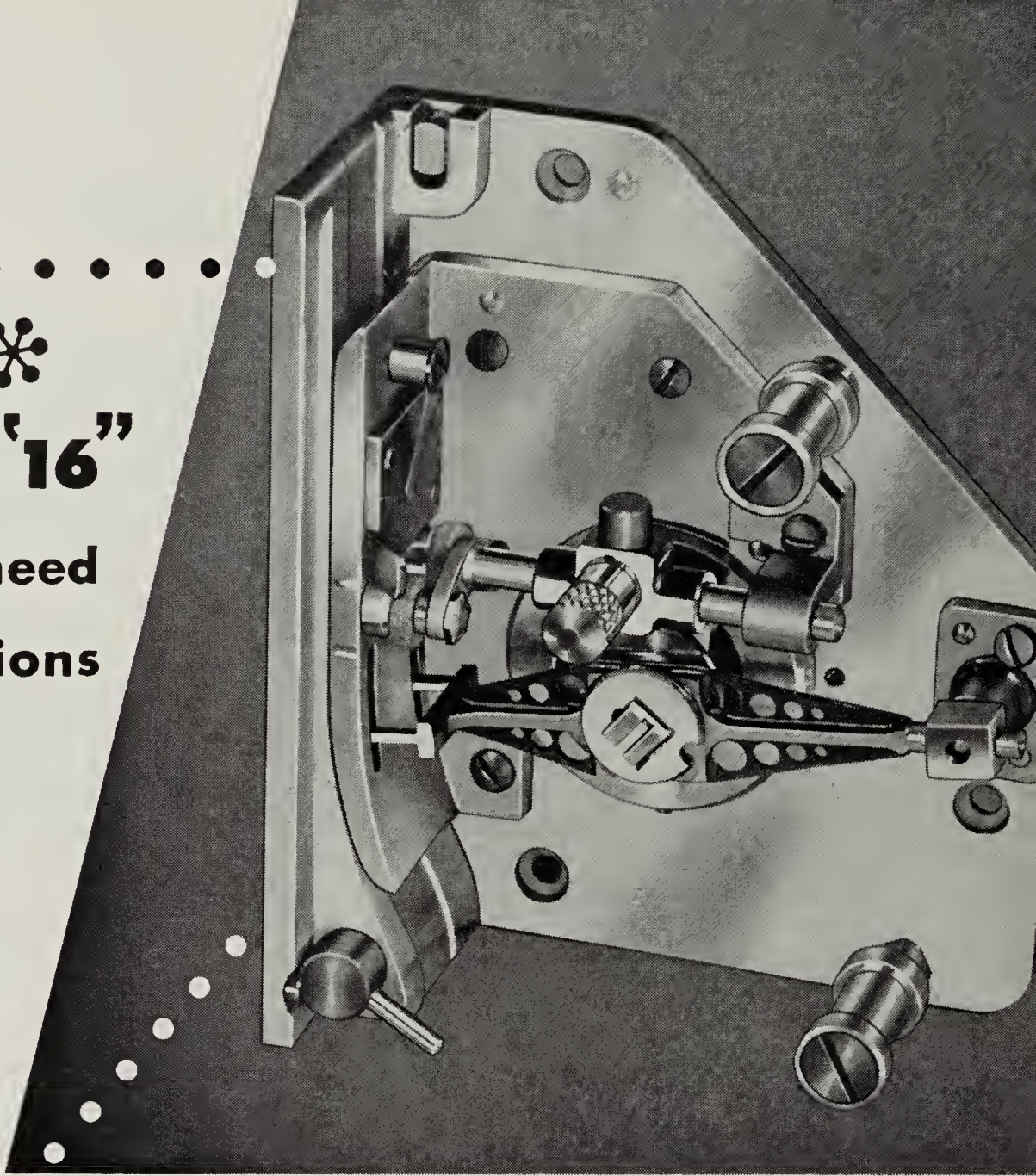
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# AMERICAN INEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 29

APRIL, 1948

NO. 4

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ON THE FRONT COVER—Greer Garson and Walter Pidgeon are ready for a scene for the Metro-Goldwyn-Mayer production of "Julia Misbehaves." Director of Photography Joseph Ruttenberg, A.S.C., is in left foreground directly under the suspended camera, while director Jack Conway is seated at his right.

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# A SEVEN REELER IN 7 DAYS— IT CAN BE DONE!

By VIRGIL MILLER, A.S.C.

**W**HEN I was called and asked if I could do a feature production in SEVEN days, I frankly had my doubts, but having been a serial cameraman back in 1917, with a reputation for speed, I told them I'd take a chance if they would.

Frankly, I had never done one in so short a time, and reasoned that they'd probably go over a day or two, which seems to be general procedure. Having photographed well over two hundred feature pictures, I decided that I would have to call on all of my "short-cuts"; even then, I very frankly told the Producer that I couldn't give him "Seventy-Day Photography" in seven days, but at the same time would insist on doing nice work—for a cameraman is judged on his photography without the time element being taken into consideration.

I also insisted on helping select my own crew—men whom I knew to be efficient, and at the same time men with whom I could work satisfactorily—in other words, the best men available.

Having read the story, I made a few suggestions to the assistant director; checked on the studio where we were to

work, ascertaining equipment to be used; told them I wanted a BNC Mitchell, as we had sound throughout the picture. I also helped work out the transportation troubles, as we had five exterior locations, and thirteen interiors.

I might as well mention the name of the company and the men who made the making of the picture possible. Wilshire Productions, James Doane, President; George McCall, Producer; "Doc." Joos, Ass't Director; Leo Peppin, Second Ass't Director; Frank Dexter, Art Director; and Albert Kelley, Director.

My own crew consisted of John Martin, Operator; Bob Pierce, Ass't Cameraman; Roy Black, Gaffer—altogether a swell bunch and all of them experts in their respective lines.

Needless to say, the story had been stripped down to essentials—we didn't have to shoot several sequences that couldn't be used—everything in the story was necessary to its proper telling. Our two principals, Marcia Mae Jones, and John Gruel, were experienced, and of course were told to know their lines; I'm glad to say they proved real troupers, as did all the other actors in the picture.

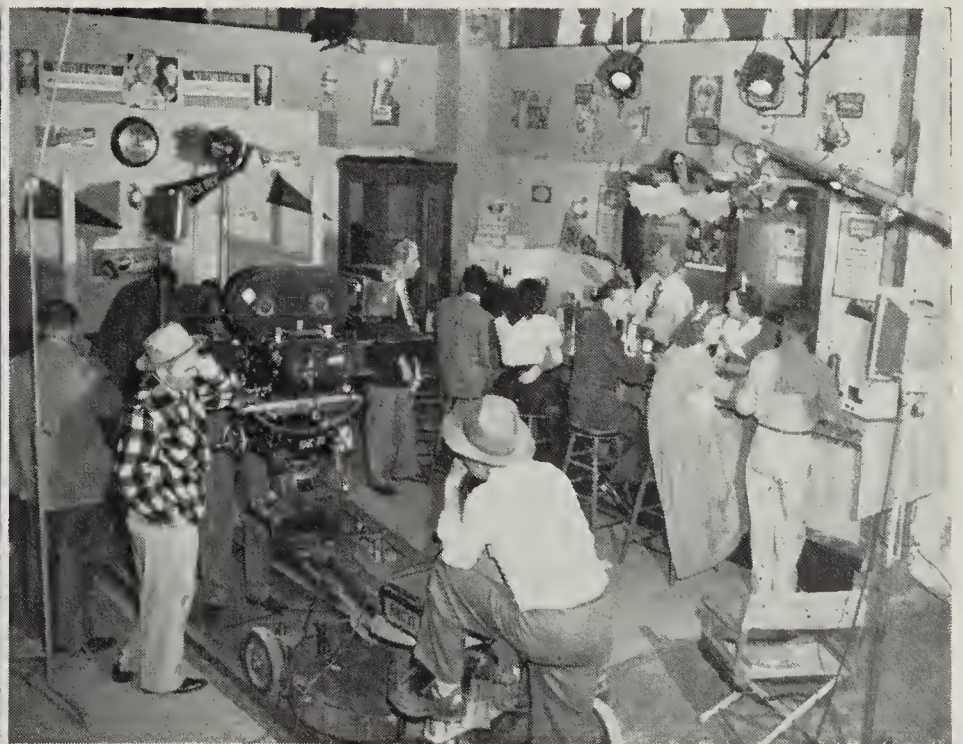
Our first two days were exteriors—much of it "night stuff shot in the daytime" with filters. We had no booster-lights, other than a half-dozen photo-floods, consequently our first two days were "long in action and short in hours"—possibly a full eight hours each day—we were home by six o'clock.

Then followed five days of real efficiency in picture making. The sets were ready; the director, Al Kelley, knew what he wanted; we, the crew, knew how to get what he wanted.

There were occasional delays, as there will always be; certain dialogue must be slightly changed; sets arranged; a little sound trouble (Glen Glenn was sound man and did a fine job), etc., but on the whole, we moved right along.

And I might add here, that we didn't apparently work any harder than on a production requiring from eighteen to twenty-four days, or longer, but we worked in unison; there were no false moves; we were as sure as possible that all mechanical apparatus was functioning

(Continued on Page 139)



Exterior and interior camera setups for "Street Corner," which was produced with experienced Hollywood production personnel in seven days. Director of Photography Virgil Miller, A. S. C., is behind camera in photo at right in plaid jacket.



# "A DOUBLE LIFE"

As a murder story, "A Double Life" is as different from the average whodunit as a Rembrandt is from a Sunday supplement cartoon.

## THE CAMERA GOES BACKSTAGE

By HERB A. LIGHTMAN

IN A movie-going year during which a flood of mediocre films has graced the American screen, it is a genuine privilege to be able to heap extravagant praise upon a truly outstanding photoplay: the Universal-International production, "A Double Life."

Brilliantly produced, directed, photographed and acted, "A Double Life" blends art and entertainment into a tantalizing dish that critic and film-goer alike will find hard to resist. It is a taut, literate, suspenseful, thoroughly entertaining length of celluloid which proves beyond the vaguest doubt that *ideas* and not *dollars* make fine screenfare. It is a glowing example of the perfect co-ordination of all elements of production. Its action is as absorbing as a book that you can't put down. In short, "A Double Life" is a very fine motion picture indeed.

The production staff working behind

the scenes on the film included some of Hollywood's finest talent. The picture was produced by Michael Kanin, directed by George Cukor, written by Hollywood director-Broadway playwright Garson Kanin and his actress-writer wife, Ruth Gordon. The production was designed by Harry Horner and underscored with haunting background music composed by Miklos Rozsa. The outstanding photography which contributes so forcefully to the mood and impact of the film was executed by Milton Krasner, A.S.C.

"A Double Life" is a murder story with a difference. In it, the murderer is revealed at once, his ultimate fate is foretold, and the audience is actually made to sympathize with the culprit—and yet, even with all of the cards neatly spread out on the table, the film is infused with such edge-of-the-seat suspense that viewing it is truly an emotional experience.

### An Actor Lives His Part

The plot of the film concerns Broadway stage actor Anthony John (played with Academy award *finesse* by Ronald Colman), who becomes so obsessed with his dramatic roles that his real-life personality is dominated by his stage characterizations; he actually *becomes* the person he is playing. This works very well when the actor is doing a light comedy, but when he decides to act "Othello" his co-workers have grim forebodings regarding the effect the role might have upon him.

That they were quite right is evidenced by the fact that one night while on stage in the murder scene, Actor John is so carried away by the part that he comes very close to strangling his ex-wife who is playing the role of Desdemona. The fact that he loves her dearly only adds to his fury, and he is dragged away just in time.

As the run of the play continues, he becomes more and more dominated by his "Othello" complex until one night, completely absorbed in the characterization, he strangles a sex-ridden waitress while reciting the lines from the murder scene in the play. The press-agent for the production eager to cash in even on this sordid source of publicity, pays a reporter to compare the "crime of passion" aspects of the murder to the "kiss of death" situation in "Othello."

Upon reading this sensational bit of publicity in the paper, the actor becomes so infuriated that he attempts to choke the press agent while again quoting Shakespeare. The press agent then begins to suspect the actor of being the murder-



"A Double Life," presented by Universal-International, is a thrilling photoplay about an actor who "lives his part" not wisely, but too well. Superbly written, directed, acted and photographed, the picture authentically captures the atmosphere of backstage Manhattan. (Left), the bold lighting style of Director of Cinematography Milton Krasner, A. S. C., adds force to the drama of the film. (Right), the full-size theatre set on the Universal-International lot, originally built for Lon Chaney's "Phantom of the Opera," was remodeled into a modern Broadway playhouse for "A Double Life."





The outstanding photography of Milton Krasner, A. S. C., in "A Double Life" actually takes the audience backstage and onto the stage during performances of "Othello." (Left), instead of using conventional angles from the audience toward the stage, Krasner shot toward the audience and across the stage—often shooting directly into the stage lights for added realism. (Right), dynamic backlit close-ups of the main characters on stage subjectively bring the audience in contact with a madman bent on murder. Strong, but thrilling, stuff to watch.

er, and the ruse he uses to bring him to justice provides a pulse-pounding final reel for the picture. The actual device by which the actor gets his just deserts is so neatly (and logically) contrived that we shall refrain from revealing it, in order to avoid spoiling the film for those who have not yet seen it.

All of this action (which might have been sheer melodrama in less capable hands) is precisely motivated by the schizophrenic personality of the actor himself. The well-knit screenplay gives the audience an X-ray close-up of the man's soul, delves into his distorted psyche, and actually makes you feel sorry for him with that strange mixture of emotions that is sometimes present when you see a dangerous animal caught in a trap.

### Mood a la Mode

"A Double Life" owes much of its force to the authentic and varied mood breathed into it by a staff of perfectionists for detail. There have been countless photo-plays set in Manhattan, but never one that so aptly caught the sophisticated tempo of the "bright little isle." There has been a veritable epidemic of backstage films, but no picture has ever smelled so convincingly of grease paint. "A Double Life" doesn't merely take you backstage—it takes you *onto* the stage during rehearsals and performances and an attempt at murder that wasn't in the script. It's all there on film: the hustle-bustle of Broadway, the fever pitch of rehearsals, the nervous tension of opening night, the brittle gaiety of after-the-show

cocktail parties. For those who have ever vibrated to the pulse-beat of backstage Manhattan, the film will produce a certain hectic nostalgia.

Creating this sort of authentic mood is a difficult assignment. In previous backstage films, the "Great White Way" has usually smacked a bit of Sunset Boulevard. The stage itself has always been portrayed as a limitless area neatly accommodating sets the size of two sound stages—instead of the cramped, dusty, rather shabby shell of worn boards and wall radiators that Broadway stage actors must transform into little patches of magic. But the producer, the director, the writers, and many of the actors responsible for "A Double Life" are stage people—

(Continued on Page 132)



Wide-angle compositions, low camera perspectives and sharply contrasted low-key lighting produce photography that is expertly tailored to the dramatic moods of "A Double Life." The company spent three weeks on location in New York photographing scenes in their actual locales. Exterior night shots of the theatre district, Greenwich Village and the Italian Quarter are especially effective.



# Academy Award Winners

## Best Cinematography—1947

### "BLACK NARCISSUS" "GREAT EXPECTATIONS"

**T**WO British-made productions released in the United States during 1947, were adjudged the best photographed features of the past year by vote of members of the Academy of Motion Picture Arts and Sciences.

Jack Cardiff, A.S.C., Director of Photography for the Technicolor production

of "Black Narcissus," was awarded the Academy statuette for his outstanding work on that picture.

Guy Green was honored for what was adjudged the best black-and-white photography for his photographic direction of "Great Expectations."

The general technical excellence of both

productions—as indicated by voting of Academy members—is recognized by the fact that best art direction awards for both color and black-and-white were presented to Alfred Junge for "Black Narcissus" and John Bryan for "Great Expectations."

Jean Simmons, currently in Hollywood from England to star in a picture for Universal-International, accepted the Academy "Oscars" for the honored Directors of Photography and Art Directors, and was extremely happy to walk to the platform of the Shrine auditorium four different times to accept the trophies for the absent four. The statuettes will be sent to the individuals in England by representatives of the J. Arthur Rank Organization in Hollywood.

#### International Recognition

That the leading artists of the Hollywood sector who comprise the 2,000 members of the Academy of Motion Picture Arts and Sciences, recognize outstanding achievement in all branches of production on an international basis, is demonstrated by the awards to British artists and technicians for their splendid work on the pictures cited above.

#### Other Technical Awards

Metro-Goldwyn-Mayer's "Green Dolphin Street" won the Academy Award for the best special photographic effects, with department heads A. Arnold Gillespie; and Warren Newcombe accepting the "Oscars" for the special visual effects; and Douglas Shearer and Michael Steinmore receiving the awards for special audible effects.

Samuel Goldwyn's "The Bishop's Wife," was the winner for Best Achievement in Sound Recording, with Gordon Sawyer accepting the statuette.

"Climbing the Matterhorn," first theatrical subject photographed in Ansco-color, was adjudged the best two reel short subject.

#### Finalists for Cinematography

Procedure in selecting the finalists for outstanding achievements by the Academy provides for each division of artists or technicians to vote for nominees. In the case of the color and black-and-white



British film star Jean Simmons (right) accepted the Academy statuettes for English winners for best achievements in black-and-white and color production cinematography and art direction. Dick Powell presented the art direction trophies, while Agnes Moorehead (left) handed out the "Oscars" for best cinematography.



cinematography division, all Directors of Photography in Hollywood participate in the primary voting, and the three top productions in each division go into the finals for voting by the entire Academy membership.

"The Ghost and Mrs. Muir," Charles Lang, jr., A.S.C., as Director of Photography; and "Green Dolphin Street," George Folsey, jr., A.S.C., as Director of Photography; were the finalists with "Great Expectations."

"Life With Father," Peverell Marley, A.S.C., and William V. Skall, A.S.C., as Directors of Photography; and "Mother Wore Tights," with Harry Jackson, A.S.C., as Director of Photography; were finalists with "Black Narcissus."

### Scientific and Technical Citations

Annually, the Academy recognizes scientific and technical achievements of outstanding merit. These are bestowed "upon recommendation of the Scientific or Technical Awards Committee, for a device, method, formula, discovery or invention of special and outstanding value to the art or science of motion pictures."

No awards were presented this year for Class I—"for those achievements which have a basic influence upon the industry." Only five have been bestowed since 1930.

Two Academy Plaque Awards were granted in Class II:

*TO: C. C. Davis and Electrical Research Products, Division of Western Electric Company, for the development and application of an improved film drive filter mechanism.*

This mechanism is a fundamental improvement in film drive, resulting in better film motion in any type of studio sound recording and studio or theatre sound reproducing equipment. It has reduced flutter problems, simplified film threading and equipment adjustments, and requires no critical manufacturing tolerances. As this device is suitable to theatre as well as studio equipment, its application has a definite influence on the industry as it results in improved quality in the theatre.

*TO: C. R. Daily and the Paramount Film Laboratory, Still and Engineering Departments for the development and first practical application to motion picture and still photography of a method of increasing film speed as first suggested to the industry by the E. I. DuPont de Nemours & Company.*

The purpose of this method is to increase the speed of presently-available photographic film. It consists of a precisely controlled system of post-exposure and development of the latent image on exposed negative. This technique, increasing effective film speed from three to four times, permits night photography under adverse lighting conditions, increases depth of focus necessary in certain transparency process projection shots, can be

utilized to reduce set lighting costs and allows a lower brightness of translucent screens. Its application to still photography permits action still shots to be taken simultaneously with motion pictures, which is usually impracticable.

### AWARDS IN CLASS III (Certificate) were:

*TO: Nathan Levinson and the Warner Brothers Sound Department for the design and construction of a constant-speed sound editing machine.*

This machine allows rapid, accurate and easy identification of music notes and speech syllables. It consists of two sets of rollers driven by a single motor at constant speed but in opposite directions. The film is driven and reversed by friction, controlled by light finger-tip pressure. The machine's instantaneous starting, stopping and reversing features, small size, and ease and control of operation, make it valuable in editing sound track where extreme accuracy is necessary.

*TO: Farciot Edouart, C. R. Daily, Hal Corl, H. G. Cartwright and the Paramount Transparency and Engineering Departments for the first application of a special anti-solarizing glass to high-*

*intensity background and spot arc projectors.*

Quartz condenser lenses on high-intensity arc projectors have long been subject to color solarization, resulting in deterioration of photographic quality and expensive replacement of condensers. This anti-solarizing glass, acting as an ultra-violet filter, protects the quartz condenser lens and allows it to retain its original color and high efficiency. The development and application of this glass to quartz condensers of high-intensity arc projectors is important to both color and black-and-white production as it makes possible the uninterrupted use of transparency process projectors, stereopticons and spot projectors.

*TO: Fred Ponedel of Warner Brothers Studio for pioneering the fabrication and practical application to motion picture color photography of large translucent photographic backgrounds.*

This method represents the first successful fabrication of large translucent backings for color photography. The application to production of these backings with their realistic reproduction of background

(Continued on Page 138)



Jack Cardiff, A. S. C., whose color photography for "Black Narcissus" was voted best for 1947 by Academy members.



# Television Field Opens For Cinematographers

By ESTHER TOW

The rapid increase in video users and licensed stations, coupled with the tremendous need for films for television gives promise of wider employment opportunities to motion picture technicians than ever before, according to Jerry Fairbanks, film producer pioneering in the field.

Allen Siegler, A.S.C., is photographing "The Public Prosecutor," the first of Fairbanks' films for television. Fairbanks has two other series ready to shoot, and plans several others. Each series will consist of 17 twenty minute films.

Figuring five persons per set, the television audience is estimated to have jumped from 125,000 in 1945, to 375,000 in 1946, to a million in 1947. The 1948 audience is expected to number 3,750,000 in the United States.

Although there are only 18 television stations on the air, of which 16 are commercially licensed, applications are coming into the F.C.C. at the rate of 13 per week. In the L. A. area alone, seven channels have been licensed.

Conservative estimates believe films will supply anywhere from 50 to 80 per cent of the television day. Budget wise, and in eliminating the margin of error, they are superior to live shows. Costs can be amortized over a longer period of time and

among many different stations. National distribution and elimination of time changes can be obtained only through the use of films. Most important of all, live shows are unable to utilize special effects, so necessary for suspense in drama. Since one picture equals the appeal of 10,000 words, it is expected that many more advertisers will be attracted to this medium.

Any single station will probably have a weekly film requirement of 56 hours.

Contrasted with the less than two hour per week film output of any major motion picture studio, the implications for the future of film men in television are fantastic.

Both 35 mm. and 16 mm. film have been used. At present writing, it seems most practicable to shoot on 35 mm. and then reduce to 16 mm. The technique is developing and requires the guidance of the well trained motion picture photographers having the background and experience gained through many years of practical production.

## A. S. C. First Contributor to Academy Permanent Film Collection

The American Society of Cinematographers has made an initial contribution of five hundred dollars to the Academy of Motion Picture Arts and Sciences Foundation, devoted to raising funds for the two-fold purpose of restoring to the screen the first twenty years of motion pictures, and for the building of a permanent film collection.

This aspect of the Academy's broad cultural program was necessitated by the failure of the 1947 Congress to appropriate funds for the continuance of the film preservation project started by the Library of Congress in 1943. The first part of the project, as started by the Library of Congress, was to transfer to celluloid the nearly two and one-half million feet of paper film submitted for copyright purposes from 1897 to 1917, the first twenty years of the industry. It is estimated that this will take about five years. The second part of the project is to collect for research purposes all newsreels, factual films, and those entertainment films, which, because of box office appeal, or artistic merit, from a public, rather than personal view point, reflect our national modes, and provide a visual historical record of our culture from year to year.

From 1943 until 1947, although retarded by the war, Mr. Howard L. Walls, curator of Motion Pictures in the Library of Congress, under Archibald McLeish, and currently serving in a similar capacity for the Academy, was able to develop the national film project from an office to a division.

Until 1912, motion pictures as such, on celluloid, could not even be copyrighted. Paper prints were submitted to fall under the provision that only still photographs, or a series of still photographs related to a single subject, could be copyrighted. In 1912, provision was finally made permitting the copyright of motion pictures on celluloid. However, since no scientific way to safely preserve the hazardous ni-

trate film had been found, the films were taken to the copyright office, registered and returned to the producer the same day.

Preliminary study of these early films has already revealed the beginnings of most of the motion picture developments in current use. In the first twenty years of the industry, we see filmic montage, experimental lighting, and first attempts at narration, and newsreel.

If able to continue, the Academy Foundation will provide the only historical record of one of the largest industries in the world.

### VERNON L. WALKER, A. S. C.

**Vernon L. Walker, A.S.C., 54, head of the Special Effects Department of RKO Studios for the past 18 years, died suddenly of a heart attack at his home in Balboa, California, on March 14th.**

**Following war service with the U. S. Army Signal Corps in 1917-18, he headed for Hollywood and joined the camera staff of Fox Studios; moving over to the Mack Sennett organization in 1924 and several years later went to Warners. He accepted the post of head of the special effects department at RKO Studios in 1930, and—during the ensuing years—assembled a compact organization of experts to whom he repeatedly gave full credit for unusual and money-making achievements of the department under his expert guidance.**

**Walker is survived by his widow, one daughter, two grandsons, and two brothers.**

### SPECIAL EFFECTS FOR "GREEN DOLPHIN STREET"

The Academy Award recognition of the special photographic effects for the Metro-Goldwyn-Mayer production of "Green Dolphin Street" as the best in black-and-white for 1947, honors several members of the American Society of Cinematographers who combined their talents to accomplish an overall outstanding assignment.

Max Fabian, A. S. C.; Harold Marzorati, A. S. C.; and William N. Williams, A. S. C., were the photographers on the special photographic effects in the department headed by A. Arnold Gillespie.

Mark Davis, A. S. C., photographed the matte paintings for Warren Newcombe; while Irving Ries, A. S. C., was in charge of producing the very intricate optical effects on the production.

George Folsey, A. S. C., was the Director of Photography on "Green Dolphin Street," which was in the finals for best black-and-white photography.



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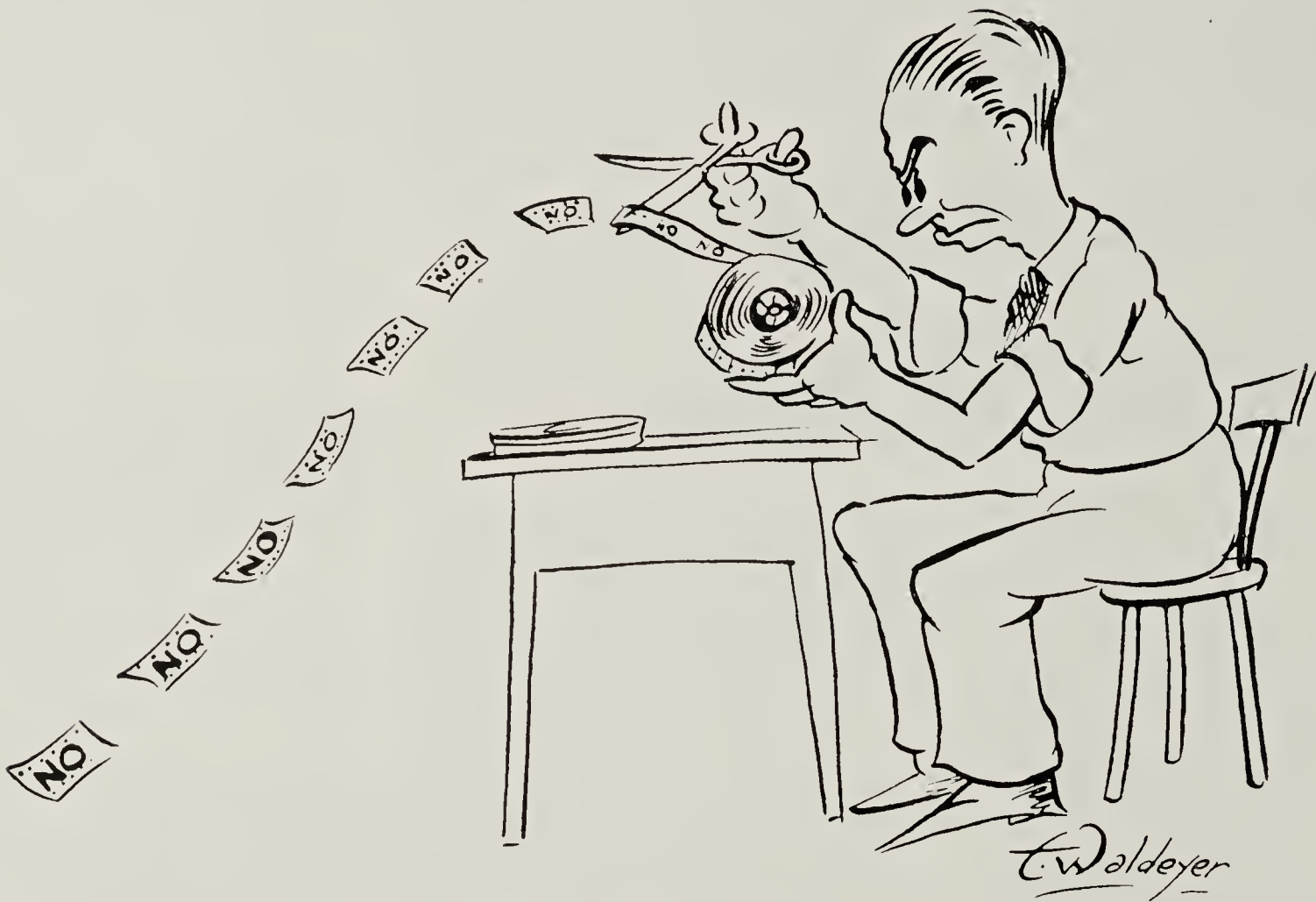
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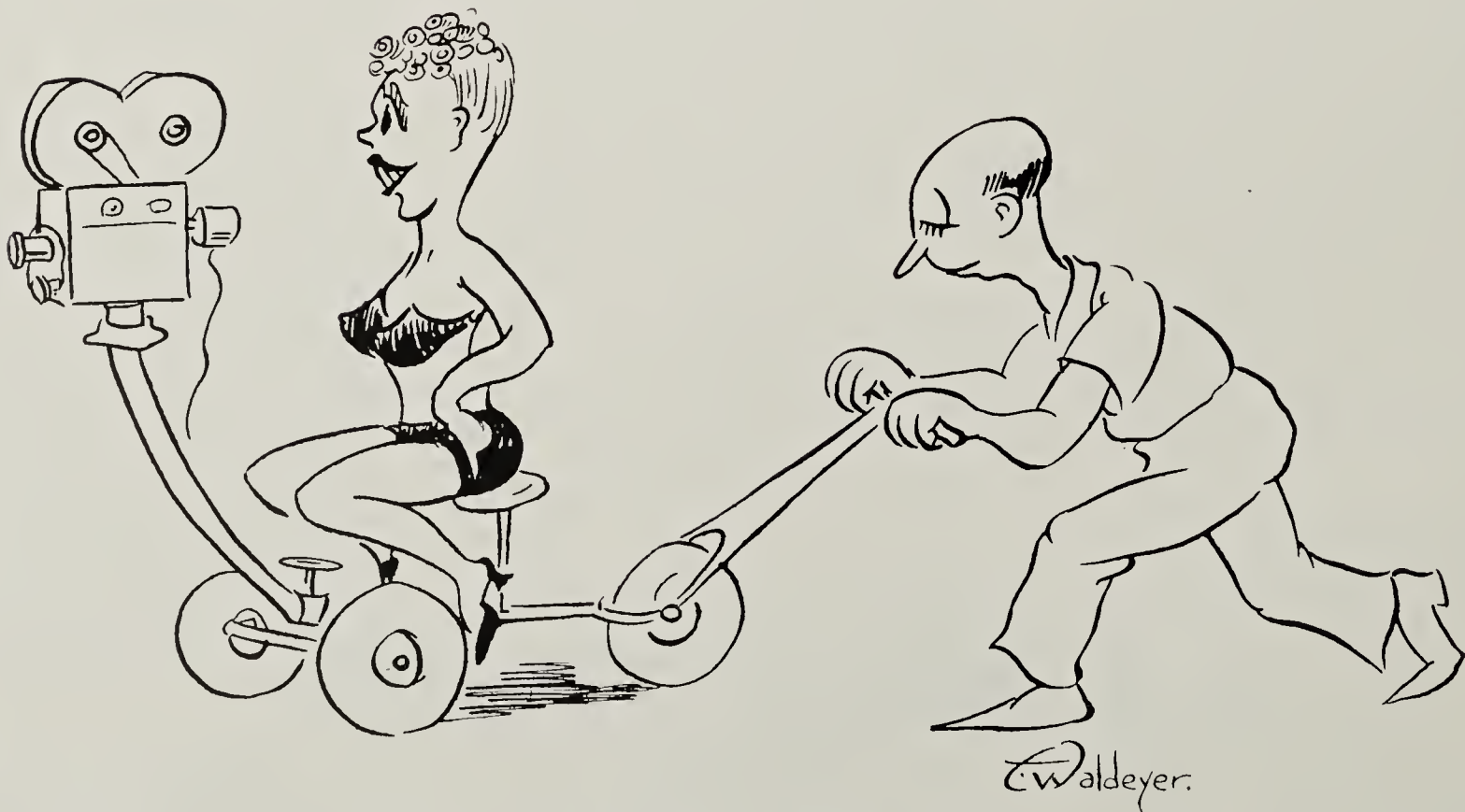
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**CARTOONIST'S GLOSSARY OF CINEMATOGRAPHY . . . by TED WALDEYER**



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# A Guide For Better Spices

(This pertinent and important information on making good splices was presented by Joseph Harley at a recent meeting of the Metropolitan Motion Picture Club, New York City, and reprinted from the club bulletin.)

First, never handle your film without white cotton gloves, unless you have learned to hold the film by its outer edges only. Perspiration marks from your fingers will ruin every frame you touch.

After you have cut the film, scrape off not only the 3 layers of emulsion, but scrape right down to the bond material so that the surface is both grayish in color and roughened. Do not tear perforations.

If your splicer is of the type that can be guided in scraping by your hand, be very careful not to scrape off too much of the frame, but just enough so that the over-lapping frame will cover. If you scrape off more than that, you will have those annoying light flashes on the screen each time a splice passes the gate in your projector.

Do not use old cement as the cement evaporates and loses its strength which means that your splices will part and at the wrong time, too.

When you open a new bottle of cement, trim the brush with a small scissors so that it will not spread the cement over too large a surface.

Spread the cement lightly and clamp down at once. Open up the left side of your splicer the very instant that you lock the right side into place and gently wipe away any excess cement that may have been squeezed out from the new splice. Do this *at once* and with a clean, soft, lintless cloth. This eliminates flashes of blue that you see so often and which are

caused by excess cement spread over the film.

The majority of the members at the meeting agreed that the diagonal splice was no stronger than the shorter splice and that it showed up much more on the screen. It was also found that the electric splicer now on the market heated the film in making its weld so that there was an objectionable white flash on the screen. The film actually broke from the brittleness caused by the heating of the splicer.

The main ingredient to remember in making splices is simply this; no one ever made a good splice CARELESSLY. Study your splicer's habits. Work within the scope of its capacity and TAKE LOTS OF TIME.

## Films in Public Libraries

According to a recent report made by Hoyt R. Galvin, Director of the Charlotte Public Library, for the Audio-Visual Committee of the American Library Association, more public libraries are adding film divisions.

The report, published in the August issue of the Library Journal informs us that:

14 percent of the public libraries now handle films; 19 percent more plan to;

31 percent of college libraries now handle films; 13 percent more plan to;

25 percent of public libraries and 19 percent of college libraries definitely plan the purchase of motion picture projectors;

10 percent of public libraries and 12 percent of college libraries definitely plan to purchase slide film projectors;

6 percent of both college and public libraries are setting up projection rooms.

## TED WALDEYER—CARTOON CREATOR

The cartoons on the opposite page are the first of a regular series to be published in *AMERICAN CINEMATOGRAPHER*, and created by Ted Waldeyer, under the title of "Cartoonist's Glossary of Cinematography." His humorous conceptions of general terms used in motion picture photography will be recognized as outstanding sketches in both originality and execution.

Waldeyer is Chief Film Editor for Encyclopaedia Britannica Films, Inc., of Wilmette, Illinois. In his early days, he drew and photographed portions of the old silent *AESOP'S FILM FABLES* under the direction of Paul Terry. He drifted into the film editing end of these animated cartoons when sound came in, and has continued to do more and more of the snipping and tying together again of films. Meanwhile, he contributed to the *New Yorker* and other magazines, but his largest audience was for several *Subway Sun* cartoons originated for the BMT lines in New York. With Andy Costikyan, cameraman for Encyclopaedia Britannica Films, he conceived and drew the "Cartoonist's Glossary of Cinematography."

Last year, Ted again had the opportunity to work on an Aesop Fable—but this time on the live-action photography for EBF's production of "The Hare and the Tortoise," a charming one-reeler using live actors; and a task to tax the ingenuity of a film editor!

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# MY FIRST 50 YEARS IN MOTION PICTURES

By OSCAR A. DEPUE

(World-travelled Cinematographer Associated with Burton Holmes and Designer of the Depue Film Printer)



Oscar Depue (left) with Burton Holmes in 1911. The camera is an Urban Bioscope, while Mr. Holmes is holding a Speedo hand camera.

*(The author was undoubtedly the first motion picture cameraman to photograph travelogues, and his adventures in making pictures for travel-lecturer Burton Holmes took him to many far corners of the world. This account of his experiences in securing cameras and equipment a half century ago, and the many adventures in photographing world-renowned points of interest for the first time, was first presented at the April, 1947, convention of the Society of Motion Picture Engineers in Chicago, and published in the December, 1947, issue of SMPE Journal. It is reprinted here by special permission.)*

IN 1887 I was employed by the McIntosh Battery and Optical Company in Chicago, a firm operated by Dr. McIntosh, inventor and designer of many electrical and optical devices for the medical profession. The doctor gave many lectures before medical students and medical conventions. Work with him gave me the opportunity to learn the art of slide projection, microscopic work, and the handling of battery appliances and static machines for doctors' offices.

Ultimately, in addition to assisting Dr. McIntosh, I became a projectionist for other doctors and for various public lecturers. I was frequently sent out of the

city and my ingenuity was taxed in overcoming the difficulties of installing projectors and screens in a wide variety of halls, churches, and theaters which, at that time, had little equipment of their own. The illumination for stereopticon projectors was the calcium light. In fact, this was the only illumination even up to the time of motion pictures, and we used it for them during the years of 1897, 1898, and 1899.

It was while working with Dr. McIntosh that I first met Burton Holmes, who was searching for someone to project some lantern slides that he had made in Japan in 1892. He had brought back enough snapshots of the country to give an evening's entertainment or lecture on his travels. For his initial tryout on the Chicago public, he rented the recital hall on the seventh floor of the Auditorium building, counting quite heavily on his family's acquaintanceship with many of Chicago's society leaders.

This tryout in November, 1893, The World's Fair year, was a complete success—even with only the four performances planned. The hall seated about three hundred and fifty persons, and before the series was completed, the audience was sitting on camp stools in the aisles. That

was the beginning of my association with Burton Holmes which eventually led to motion pictures and my work today.

In 1895 I traveled in Europe taking still pictures with Mr. Holmes. The trip was a bicycle tour through England, France, Corsica, Italy, and Switzerland. The pictures were made into hand-colored stereopticon slides which we showed in the winter at lectures in an ever-widening circle of cities.

In 1896 we realized that we had a growing rival—the motion picture. As a result, in 1897, at the end of the 1896 season, Mr. Holmes sailed for Sicily and Italy and I sailed for London, the Mecca for motion pictures at that time. My intention was to search out and buy a motion picture camera. I found little from which to choose, and the prices were exorbitant. I was forced to go to Paris to see what I could find there. The situation was almost as bad—with one exception. Mr. Leon Gaumont had a Demy camera for 60-mm film—the only machine that I could find in all of Paris. It was not what you would call a facile piece of apparatus; it was cumbersome and its tripod was a piece of two-inch plank fitted with solid iron legs (not adjustable). I was somewhat fearful of what I



could do with this equipment, but nevertheless I purchased it and took the first train to Rome to join Mr. Holmes.

It was there that I made my first motion exposure. I chose St. Peter's Cathedral and the great Piazza with its obelisk and fountains as a subject—a subject, I admit, that lacked animation until a herder with his flock of goats passed in front of the fountain to give it movement.

It may seem ridiculous now to consider that then I thought I must always have some famous background for my motion pictures. I had not quite broken away from still photography enough to realize that movement was the chief function of motion pictures.

That photographic expedition led me to Naples, Venice, and Milan and then up to Paris again where I took just one motion picture. This was the Place de la Concorde—a scene that had *real* animation. I secured the picture by planting a cab at the busiest place in the Concorde. With the driver's seat for my tripod, I was able to photograph the teeming traffic at close range. The police remonstrated with me vigorously for blocking traffic, but I "failed to comprehend" what they were after until I had finished what I was after—fifty feet of picture.

This negative and those made previously in Italy were taken to the Gaumont studio for development. I left the negatives with them in exchange for one print from each. Some fifteen years later, Mr. Gaumont graciously sent us these negatives, which are now in the Burton Holmes Films' storage vaults.

My next step was to return home and start to get equipment together for developing, printing, and projecting these motion pictures and others that I was soon to make of New York, Yellowstone Park, and other points of interest.



The author photographing tourists visiting the pyramids of Egypt outside of Cairo in 1906.

En route, I stopped in Rochester to visit the Eastman Kodak Company and had an interview with Mr. George Eastman. He agreed to cut film, both negative and positive, in a 60-mm width for me. He also gave me some ideas of how he thought I might build a printer.

I did build the printer, following his ideas and some of my own. It was a very amusing gadget when I look back at it today. The printer was mounted on a wall in a darkroom, with a hole through the wall to admit the exposure light from a lamp in the next room. The lamp was mounted on a rod so that I could slide it nearer or farther away from the film to suit the density of the negative which was observed as it passed in front of a slit.

The lamp, mind you, was a Welsbach gas lamp—no such luxury as the electric light which came two years later.

The major problem of providing power to operate the printer was solved with a small water-wheel motor that I attached to the water faucet in my basement. This power, little as it was, was sufficient to drive the printing machine and a film perforator which I built as well. All this equipment had to be completed in time to have the films ready to be shown in the fall of 1897.

In addition, I had to convert the Gaumont camera into a projector. It proved to be quite satisfactory. The motion pictures were shown after Mr. Holmes' lecture proper, as a fifteen- or twenty-minute



(Left), Mr. Depue and camera with group of American newspaper men on reviewing stand at St. Petersburg where the Czar had reviewed the Russian troops. Crossing the River Iguassu (right) to set up camera position to photograph the great falls, 1910.



added attraction. With the spontaneous outburst of applause that followed the first roll, we had the great satisfaction of feeling that it was a real success, which, indeed, it proved to be during the rest of the season. As far as I know, these programs in the fall of 1897 marked the first time that motion pictures were used by any public lecturer in this country.

By the end of the 1898 season, I had constructed a larger camera which would accommodate 200-foot rolls of negative. I also made some improvement on a portable tripod. This equipment was taken to the Grand Canyon of the Colorado for the first motion pictures made of that sight.

We then went on to Honolulu for a tour of the Hawaiian Islands. The American troops were passing through Honolulu on their way to Manila, for the Philippines had come into our possession through Dewey's victory at Manila Bay.

Returning from Hawaii, we stopped again at the Grand Canyon to make more footage and also visited the Hopi Indians' snake dance at Oraibi to make the very first motion pictures of such a ceremony. One year later I returned to photograph a snake dance at Walpi, the largest of the region's villages.

This second visit afforded an opportunity to show the Indians the pictures taken the year before so, on my way back to Canyon Diablo to take the train for home, I spent a few days at an Indian trading post called "The Lakes" run by Mr. Volz. My projecting equipment, a calcium-light outfit, and tanks of oxygen and hydrogen had been sent out in advance. Through Mr. Volz's co-operation, we gathered an audience which I believe was the most interesting I've ever seen. We set the projector in the back end of a lumber wagon and attached the screen to the side of the trading post. Several hundred Indians squatted around in circles on the ground waiting for something to happen.

In addition to the snake-dance pictures, I had photographed some Indian sports at the same location. One of these was called a "Gallo Contest." A rooster was buried up to its neck in sand, then the riders swooped past, leaned down, and attempted to pluck it from the ground without falling from their horses. You could hardly call this a humane sport, but it was the Indians' idea of fun—not mine. And you can imagine the reaction of my audience, who had never seen movies before, when they saw their own actions reproduced on the screen.

Another "sport" which I had photographed was the pursuit of a white girl on a fleet pony by a band of one hundred mounted Indian braves. The Indians entered into the chase with such zeal that I feared for the girl's safety and that of my camera as they raced by at full tilt. This part of the film made a hit too —



A day's repairs to the camera at Ponta del Inca, in the Argentine Andes in 1911.

but the high spot of the evening came with a mad scramble away from the screen when I showed pictures I had made of the Empire State Express dashing toward the camera, and of the Omaha Fire Department in action. Seats "front and center" went begging after that, but finally the Indians' fears were allayed and the show went on.

One of the pictures taken the year before showed a storekeeper of the post who had since died. There was a shout from the Indians when they saw him and his dog on the screen. The "magic" of the movies made fans of them very quickly and the next time I wanted to film their games, I had no trouble in obtaining the assistance of the whole tribe. When the show was over, the audience was curious to know where the pictures came from; they touched the screen and looked behind it, but strangely enough paid no attention to the projector in the wagon.

In 1899 I built a new camera with a capacity of 400 feet of negative. It had



At the summit of the Trans-Andina railroad—11,000 feet high—in 1911. Depue is carrying box in center of picture.

some modern conveniences such as a foot-age counter, a punch for marking scenes, and a film magazine which allowed loading and threading of the camera in daylight. However, in unloading, the film had to be removed from the camera in a changing bag, or in the darkroom. I had also built an improved projector which was patented on April 4, 1899.

In 1900 I spent my time building a portable developing outfit for a trip around the world. This trip, in 1901, took us first to Berlin, Warsaw, St. Petersburg, and then to Moscow where the trans-Siberian railway journey started. Before leaving Moscow, however, I hired some carpenters to make the wooden tanks to go with the developing racks which I had made at home—but the difficulty I experienced in getting the work done and the poor workmanship convinced me that I should wait until we reached Japan before building the drying racks which I also needed. There I found clever carpenters who constructed them quickly. They folded down to fit a box about four feet long and ten inches square.

The journey across Siberia was a memorable one. The trans-Siberian railroad only extended as far as Stratensk, a town three days' travel beyond Lake Baikal. After waiting there for several days, we secured passage on a river steamer for the first leg of a long journey down the Shilka and Amur rivers to Khabarovsk. The steamer stuck on the first sand bar, so we were transferred to one of shallower draft. We were on many boats before the trip was finished; in most of them we had to sleep on the upper deck—if there was one. Many of these craft were open barges. They got stuck the same as the steamer so on several occasions we were obliged to change to other barges with less draft. Each transfer lightened the load of the one that was stuck, so that it could be floated again.

We were twenty-eight days on this river trip, but finally we landed at Khabarovsk and proceeded by rail to Vladivostok. As soon as passage could be secured, we took a steamer to Nagasaki and from thence to Korea where we visited Fusan and Seoul, the capital.

From Seoul we went to Peking where the Boxer Rebellion had just been subdued. We saw troops of all the allies that took part in the siege—they were still there and in other parts of China. It was an opportune time for our visit because we were allowed, through the aid of our own troops, to see and film things that might not have been available to us otherwise. For instance, a company of American troops from Indiana guarded the north half of the Emperor's Palace in the Forbidden City. Japanese troops were stationed at the south half—our allies at that time—if not forty years later.

We sailed from Chefoo, China, returning to Nagasaki again where we took the



train to Tokyo. We made a number of pictures in Japan, and in September I set about developing them and all the rest taken since leaving Moscow. I was permitted to use the old clubhouse of the Yokohama club near the Grand Hotel. The developing caused little difficulty, but the question of drying the film in that very damp and heatless building was a critical one. I had film looped all over the place. It refused to dry thoroughly and finally I was forced to coil it up the best I could in order to sail on the *Coptic* for America. I finished the drying job in my stateroom aboard ship. This experience and previous ones convinced us that our 60-mm films were more difficult to handle than the smaller 35-mm that had become standard. In addition, by being off-standard, we could not always obtain film when we needed it, nor could we sell our wide film to the trade. In short, the 60-mm was passé.

The next year, 1902, I purchased a 35-mm Bioscope camera from the Warwick Trading Company in London and put it to work on our tour of Norway, Denmark, and Sweden. It was in Norway that I conceived the idea of making single-frame exposures at intervals to speed up the action seen from the bow of our steamer as it sailed through the turning, twisting fjords of that beautiful country.

In Bergen, I found a watchmaker who made me a small crank which was attached to the camera's pull-down mechanism in such a way that a single turn of the crank exposed one picture. By closing the shutter to a mere  $\frac{1}{8}$  inch wide, the exposure was about right although it depended on the speed at which the crank was turned.

Thus equipped, I planted my camera in the very bow of a steamer and by carefully observing the steamer's movements as it went straight ahead or turned for the bends in the fjords, I could increase or decrease the number of exposures to fit the apparent movement of the foreground. This first experiment, made on a short trip from Vick to Ulvick, proved quite satisfactory, but before ending our Norway trip at Christiania (Oslo) I had a chance to make a "fast" motion picture that turned out to be very successful. It showed a series of seven locks, with our steamer going into the top one and down through all the rest, then sailing away. By making single exposures at proper intervals, the action was condensed to a very short time on the screen. I really had to scramble to get the picture and then board the steamer again.

That picture was probably the first example of that type of cinematography—which we called "crazy pictures." It so impressed the Bioscope people that one of the principals, Mr. Charles Urban, asked us to leave the negative with him so that he could sell prints on a royalty basis. It was not a bad deal for us be-

cause many prints were sold. The short fjord picture was used also.

Several years later (in 1907) I made another trip to Norway and took "crazy pictures" the whole distance of a fjord journey of 120 miles. It was shown in about three minutes on the screen and gave a very good impression of such a journey. By this time I had constructed a shutter and crank that equalized the exposures. They no longer depended on how fast the crank was turned; the shutter, similar to a focal plane shutter, was activated by a spring which always gave the same exposure.

In 1903 we toured Alaska, taking the railroad over the White Horse Pass to White Horse, and then a stern-wheel steamer down the Yukon to Dawson. There we filmed the gold miners and their sluicing and hydraulic operations. During the remainder of our journey down the Yukon and on to Nome, we traveled and slept on a barge lashed to a river steamer. Returning from Nome to Seattle on the *Ohio* we passed through the Aleutian Islands with never a thought that they would one day be the scene of fierce encounters between Japs and Americans.

In 1905 we visited Germany and Austria again. We also visited Ireland, touring leisurely by jaunting car. This acquainted us with the country much more intimately than the usual trip by rail.

In 1906 we made an extended trip through Egypt, going up the Nile on a private yacht to the town of Wadi Halfa near the second cataract. On the way we visited the Valley of the Tombs of the Kings, the Temples of Luxor, and the Pyramids. We climbed Cheops, the largest Pyramids, and photographed other American tourists as they struggled up those great three-foot steps. All the films taken in Egypt were developed in Shepherd's Hotel in Cairo—a wonderful place at a wonderful time of the year—the last part of March.

Next we sailed for Italy, arriving in the Bay of Naples on April 8, just as the famous eruption of Vesuvius took place. This was the largest eruption in 300 years and it blew off the whole top of the mountain. We went ashore as soon as possible, secured hotel accommodations, then drove some fourteen miles to the base of Vesuvius. There we saw the great flow of lava which came down from its sides. The lava was engulfing and burning the homes of farmers and villagers. Part of the lava had cooled sufficiently to allow us to scale it and just as darkness came on, the lightning played around the top of the mountain, creating a wonderful display. Simultaneously we became aware of a veritable snowstorm of ashes falling on us, so we turned toward Naples in a hurry. The drive back through the blinding ash storm was a terrifying, wearying experience.

When we finally got back to our hotel,

we found that only three guests remained out of about eighty that had been staying there that morning. The rest had left to get as far away as possible. That night two inches of ash fell on Naples and tremendous quantities fell on the slopes of Vesuvius.

We set sail from Brindisi for Greece and went by rail from Patras to Athens where the Olympic Games were being held. A memorable thing about the rail journey was that passengers getting on at a way station had Greek newspapers telling of another great tragedy caused by nature—the San Francisco earthquake and fire.

Filming the Olympic Games was a pleasant task. One of my best pictures was of the high-diving contest at Phalaron. Among the contestants was Annette Kellerman making her European debut and besides putting on a marvelous exhibition, she created a stir by introducing the one-piece bathing suit. Even though the suit was perhaps two or three times larger in area than those we see at the beaches today, it was considered very daring in that day and age.

We returned to Naples where I searched for a suitable darkroom in which to develop the Olympic Games pictures. I found a small photographic studio operated by a young Austrian who rented it to me for a few days so that I could set up my portable developing machine. The ashes from Vesuvius were still falling and I had considerable trouble in keeping the films clean.

This young Austrian offered to assist Mr. Holmes in photographing around Naples when it became necessary for me to return to Chicago. He became intensely interested in motion picture work and asked Mr. Holmes how he might go about getting into it on a permanent basis. Mr. Holmes gave him a letter of introduction to Mr. Charles Urban in London. The young man spent several weeks studying English to prepare for the interview, only to find that Mr. Urban spoke German as well as he did.

The young man was hired and in four weeks time absorbed all that the Bioscope Laboratory could teach. Then Mr. Urban sent him to South Africa to make motion pictures of the diamond mines at Kimberley and the great Victoria Falls of the Zambesi River. The films that he sent back were excellent in quality; no detail had been overlooked in the taking and packing. Urban was so pleased that he sent the young man to India at the time of the Durbar to photograph the processions and ceremonies of the Coronation in Kinema-color—probably the first great event ever photographed in color. I saw these films at the Alhambra in London where they ran for over a year.

You may wonder who this young man is. I think that most of you know him—Joseph De Frenes—who today has a



motion picture production business in Philadelphia.

I have mentioned previously the second trip to Norway in 1907 to make another film of the fjord trips. It was on this trip that I purchased a Poulson wire recorder in Copenhagen. It was driven by a direct-current 110-volt motor, and so I was able to operate it in my steamer cabin while en route home. I had a lot of fun talking into it and playing back, and soon had a procession of passengers eager to record and hear their own voices. Several theatrical notables were present, including the famous Jimmie Powers who had just finished a London season. He was full of hit songs and stories, so we recorded a few. When he finished, I spoke into the recorder saying that Powers' record was made on the twenty-eighth day of August, 1907, in mid-ocean aboard the *S.S. Augusta Victoria*.

Thirty years later, aided by Walter Hotz, Burton Holmes Films' sound engineer, I re-recorded Powers' voice on film. The wire had retained the record as clearly as when it was first made. When amplified, it appeared to have lost none of its original quality, although it may have lost some volume.

This re-recording was presented to the Society of Motion Picture Engineers at a time when wire recording was again in the limelight. Today there is a strong possibility of its having widespread use in the film industry.

In 1908 we made our second world tour, going first to Hawaii, Japan, and China. From Hong Kong we took a Dutch freighter to Java, a voyage of eight days. The ship was manned by seven or eight Hollanders and a Malay and Chinese crew. The other passengers, besides the two of us, were two Japanese and two hundred and fifty coolies on their way to work in the tin mines on the Isle of Banka just off Sumatra.

One day some petty incident caused a near riot which had us fearing for our lives until the Hollanders put the whole lot down the hatchway and fastened down the cover. It sounds easy when you tell it, but it took a lot of "doing." It was very interesting to watch a handful of men handle a mob of two hundred and fifty coolies without bloodshed. They used a number of sticks which landed where they did the most good and thus achieved order again—much to our relief.

From Banka we took a little coastal steamer for a two-day run to Batavia, Java. The craft was so crowded with Javanese, Chinese, and Japanese that it was difficult to find a place to sleep on the deck.

Sometimes things were not only different, they were difficult. This was especially true in regard to our photographic equipment. For instance, Mr. Holmes had a Gaumont 9- x 12-centimeter hand cam-

era with a delicate shutter which failed as soon as we started photographing in Batavia. One of the leaves of the shutter had broken. It took a gunsmith three days to make a new one which, after half a day's photographing, broke too. I decided that this time I would do the fixing. A tin can provided material for a new leaf. In my developing kit was a small Godell Pratt drill which I clamped to a table so that it served as a turning lathe. I turned out a couple of rivets from brass pins, and attached the leaf to the shutter and then blackened it. Strange as it may seem this improvised shutter served very well for the rest of the tour and the resulting pictures were as good as those made before the mishap. From that time on I carried an ample tool kit which proved its worth many times.

Developing film in Java was another problem. While in Batavia, we stayed in a "hotel" bungalow which had a square concrete bathtub which I used for developing, but I had to wait until two o'clock in the morning for sufficient coolness. Even then the water was never cooler than 86 degrees for it came from a tank in the patio exposed to the hot sun during the day. The tank was filled by coolies who carried the water from a well some distance away.

I solved the problem by using ice, which was a scarce item, to cool the developer. I could never get enough for the hypo and wash too, so I fixed the film hurriedly, and gave it a short rinse, thus avoiding loosening of the emulsion. When we returned to the United States, I refixed and rewashed all the film and lost none as a result of it all.

The discomfort and inconvenience of the heat in Java in midsummer were compensated for by the interest that the country provided. Our round-trip railroad journey took us from one end to Soerabaja at the other. We passed many beautiful terraced rice fields on the mountainsides and many quaint villages and visited mountain resorts and historical monuments such as Boro Bodor, Soerakarta, and Djokjakarta. Each night was spent at a station hotel because there were not enough night travelers to make train operation pay and besides it was rather dangerous.

When our train returned to Batavia, I discovered that my film case was missing. I thought that it had been stolen, but the hotel manager said not to worry and he telegraphed an alarm over the entire rail system. In an hour he had an answer. When I had gone into the diner, the train stopped at Padalarang, a junction. The porter removed my film case by mistake and put it on a train bound for Buitenzorg at the end of the other line. The wire further stated that the case would be back on the next train to Batavia—and it was. The hotel man said that pilferage and robbery were rare things in Java because

escaping the law was too difficult on such an island.

After leaving Java, we spent a few days in Singapore and then went on to Ceylon to visit the tea plantations. Colombo, the seaport, was uncomfortably hot, but in Kandy, 2500 feet above sea level, we found the temperatures at 75 degrees—an ideal climate. I had no trouble developing films there, and set to work immediately, for I had found out years before that film should be developed as soon as possible after exposure—especially old film. I had tested exposed film which had not been developed for two years and found it had lost the image entirely. However, if such film were re-exposed and developed immediately, it gave a beautiful negative with no sign of the first exposure.

Rio de Janeiro in April, 1911, was delightful, but we could not tarry. The day after our arrival we were bound for Argentina and Chile. We found Buenos Aires a magnificently laid-out city, an exciting new experience. It was booming, with new streets and buildings being built everywhere. Our hotel, the Plaza, was brand new, having just opened before our arrival.

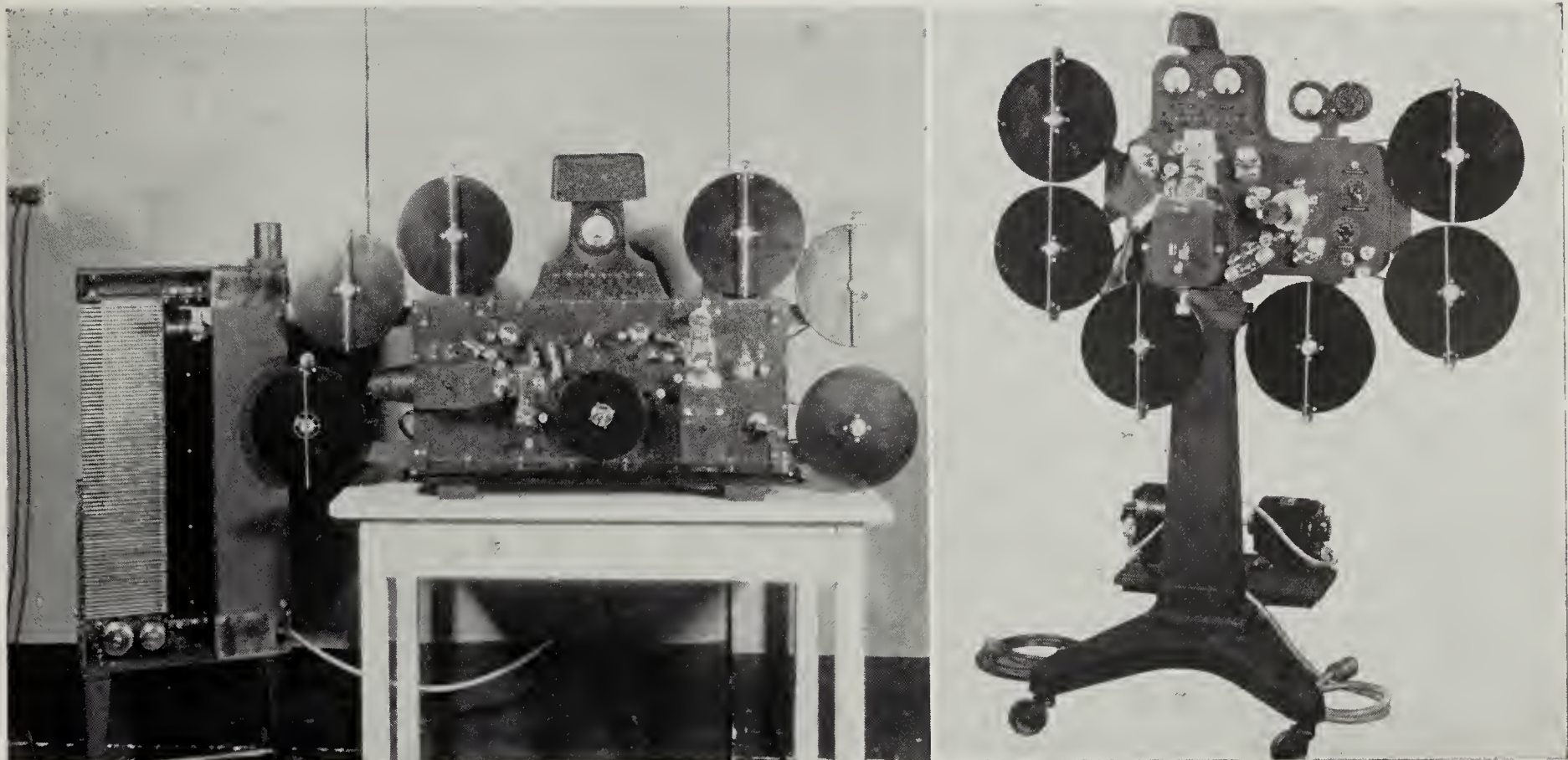
By train we crossed the great plain called La Pampa to Mendoza at the foothills of the Andes and up those rugged mountains to a resting place called the Bridge of the Incas. So thrilled were we with the awesome scenery en route that, through the co-operation of the railroad company, we did our filming from the engine's cowcatcher. This gave us an unobstructed front view, but, at the same time, the natives had an unobstructed view of us as we perched there on a sofa-like seat secured to the cowcatcher. A ludicrous sight no doubt—but we did not mind so long as we got our pictures. It was rough riding at times—in fact, the jiggling finally put my camera out of commission. But the knowledge gained in similar experiences in Java, and a good day's work with my tool kit put the camera in working order again.

We left the train at an elevation of 10,000 feet and proceeded on horseback to the great statue of the Christus, over 13,000 feet up in the bleak, snow-covered pass.

We found Valparaiso partially in ruins from an earthquake similar to the one that devastated San Francisco five years before. Santiago offered a number of good camera subjects and a hotel which proved excellent as a place to develop the films taken so far. I kept at it so late one night that I had to miss dinner. But a handy fruit stand supplied me with the most delicious pears I have ever eaten. Some of them were cactus pears. The climate in that region is very much like Southern California, but California never gave me pears so tasty.

Our return over the trans-Andine railroad occurred in a midwinter snow. That





(Left) Original combination picture and sound track 16 mm. printer designed and built by Oscar Depue in the mid-30's. Latest model takes 1,200 foot rolls for picture and sound printer, at speed of 70 feet per minute for Kodachrome and 110 feet per minute for black-and-white.

line was abandoned a few years later because of the difficulty in keeping it open and the costly repairs resulting from the rough going through the passes. Today, people cross by plane several hundred miles to the south over a beautiful lake region, not snow-clad mountains.

In Buenos Aires we heard of the great Iguassu Falls, an eleven days' journey north up the Rio de la Plata and the Alto Parana. The river steamer took us to within thirteen miles of the falls; the rest of the way was traveled by wagon over a road cut through the jungle. Because of the rapid growth of plants and trees, the road had to be cleared every two weeks to keep it open.

The difficulty of reaching the falls was forgotten when we beheld them — the most beautiful series of cataracts in the world. And to have the opportunity of being the first to photograph them successfully made the trip even more worth while. We carefully filmed each group of falls—the colorful, inspiring Brazilian group, the Argentine, the Three Musketeers, and the Union, which drops 220 feet in one great plunge. We remained there nearly a week and slept on crude bunks in a barn with only the rats to keep us company. But we had the constant roar of the falls to lull us to sleep—an even better sleep-producer than lapping waves or rippling brooks.

When we returned to Rio de Janeiro, we chose the hotel Corcovado, up 2300 feet where the temperature was ideal for developing. Well do I remember standing on the site where now the great statue of Christ is located. I photographed a sunset and far below, the lights of the city

and of the great seaside boulevards as they twinkled on at dusk. While I was turning a slow series and not making any noise, suddenly a wild fox leaped out on the sheer slanting rock not over twenty feet in front of me. As soon as he saw me, he turned carefully and fled. I say carefully because one misstep would have meant a fall of one hundred feet or more.

Time will not permit me to tell of other foreign journeys to the Orient and European lands and in our own United States. The tour of the Philippines in 1913 was one of the high spots in our careers.

I must touch briefly, however, on our association with the Paramount Company for whom we had contracted to produce weekly releases of our tours from 1918 to 1922. This resulted in six years of unbroken weekly travelog releases in Paramount Theaters.

And so I come to the end of my first fifty years of motion picture work, stretching back through the years to 1893 when Burton Holmes and I first met. But the final chapter is still in the making—for we both are still going strong. He is carrying on his lectures and packing the houses all over the country, and I am busy every day, turning out Depue printers. Surely we two have been fortunate in having the opportunity to "grow up" with the motion picture industry and to choose phases of it in which we were intensely interested. Certainly we "got what we wanted."

## Photography Reveals . . .

The nature of shock waves created by aircraft and guided missiles at supersonic speeds. By photographing the water waves set up when models of supersonic wings are towed through a channel, engineers can duplicate shock wave patterns by maintaining a ratio between the velocity of the model and of water waves equal to the ratio of the velocity of a supersonic component and of sound.

The fuel spray patterns of injection nozzles in internal combustion engines. Using a stroboscopic light source synchronized with the fuel pump, petroleum technicians can "stop" fuel spray with exposures of one to two millionths of a second, revealing the general shape of the spray and the direction and distribution of fuel particles.

Safe driving habits. A recently developed electrically operated camera, mounted on top of a bus or truck, is said to photograph the road ahead about every 500 feet. Where more careful driving is demanded, as on twisting roads or when slowing down, the camera is automatically changed to make one exposure every 50 feet. This enables the truck or bus operator to check the driver's actions through the trip. The pictures will also, of course, be a help to a competent driver if he is improperly accused of responsibility for an accident.

The track of guided missiles. Using a motion picture camera mounted on a reflecting telescope, set on the mount of a 90 mm. anti-aircraft gun, scientists can accurately follow the flight of guided missiles.



# AMONG THE MOVIE CLUBS

## Milwaukee Amateur

Titling—from planning, making, and development of film—featured the February 25th meeting of Amateur Movie Society of Milwaukee, held at the Red Arrow Club. Presentation was by John Bakke and Erma Niedermeyer, who put on the actual demonstration of titling procedure. Film program included the reel on "Multi-Efex Titler," Ralph Gray's "Paracutin," and "Time Will Tell," from the Seattle Movie Club.

Elmer Klug provided an informative talk on "How to Edit" at the meeting of March 10th, and displayed various types of editing equipment. Erma Niedermeyer gave a demonstration of method of dying fade-ins and fade-outs, and a prize winning film from ACL was exhibited.

## Los Angeles Cinema

Second annual exposition and film tournament of Los Angeles Cinema Club will be held at the Los Angeles Breakfast Club from two to 10 p.m. on August 7th. In addition to an inter-club film contest, manufacturers and dealers of motion picture photographic equipment have been invited to display new products especially suitable for the amateur field.

At the March 1st meeting, "Yosemite On Two Wheels," by Stanley Midgley, was exhibited; and Lars Moen talked on lenses and the proper approach to planning a movie. This is the first in a series of monthly talks and discussions on the various phases of movie making, and each will be illustrated with suitable film.

## New York Eight

Per Rasmussen of Copenhagen, Denmark, was the surprise guest at the February 16th meeting of New York 8MM. Club, which met at the Pennsylvania hotel. Mr. Rasmussen exhibited several films made by the 8 mm. Klubben, Denmark, members, including: "An Evening at Home," "Burglary," and "Fever." Arrangements were made for periodic exchange of films between the two clubs.

Other films on the program comprised: "Showing Up Father," by O. L. Tapp of Salt Lake City; and "Sailor's Bride," by Joseph Hollywood.

## San Francisco Westwood

Variety show of 8 mm. films highlighted the February 27th meeting of Westwood Movie Club of San Francisco, held at St. Francis Hall. Pictures included: "That's Another Story," from Southwest Movie Club; "How to Enjoy Christmas Morning," by Harold Smith; "1947 Vacation Memories," by Herman Vogel; and "Eastern Travelogue," by George Loehr-sen.

## Washington Cinematographers

Washington Society of Amateur Cinematographers met on evening of March 15th at Review and Herald Publishing House, Washington, D. C., and featured gadget night for members with their improvised accessories to make movie making easier. Film program included contest pictures comprising: "Indian Summer," by Howard Johnson; "Ice Capades," by J. E. Whittington; and "Wilderness Trail Trip," by Blair Thaw.

Club's annual banquet will be held on May 25th.

## Alhambra La Casa

The ladies presented the film program for March 15th meeting of La Casa Movie Club of Alhambra, California, held at the YMCA. Among the 35 mm., 16 mm., and 8 mm. pictures shown were: "British Columbia," by Elvira M. Walker; "Hats," by Mrs. J. M. Danek; "Mt. Rainier," by Mrs. R. L. Johns; "Scenes Here and There," by Monda L. Taylor; "Japan Today," by Mrs. H. F. Phillips; "Scenes in Western Parks," by Mrs. Ralph Taylor; "A Hop, Skip and a Jump," by Lillian Stevens; "Pacific Coast," by Mrs. C. C. Rush; "From Portland to Victoria," by Mrs. Marjorie Conrad; and "Just Rain and San Francisco," by Mrs. Nella G. Stiverson.

## Philadelphia Cinema

Annual meeting of Philadelphia Cinema Club was held at Franklin Institute on March 9th for election of officers. Nominees presented included: Dr. Raymond L. Chambers, president; Alfred E. Nichols, vice president; Victor Fritz, secretary; and Dr. Robert R. Haentze, treasurer. Films entered in the annual contest were exhibited. Dinner meeting for installation of officers will be held on April 20th.

## Utah Cine Arts

A 1600 foot 16 mm. soundfilm on coated lenses featured the March 17th meeting of Utah Cine Arts Club. Sperry Ehlers gave a demonstration of kodachrome film and a talk on colors registered, and film shown was "Trip Through Mexico, Nicaragua, and Costa Rica," by Ray E. Lloyd.

## San Francisco Cinema

Dave Redfield gave a short but instructive talk on "8 mm. Problems and Possibilities" at the March 16th meeting of Cinema Club of San Francisco, held at Women's City Club. Film program included: "Florida," by Captain Clarence Hudson; and "Along the Great Silk Route," courtesy of General Motors.

## New York Metropolitan

O. Goetz won first prize in annual novice contest of Metropolitan Motion Picture Club of New York City for his "Four Seasons." Helen Welsh captured second place with "One Day Camping in the Green Forest," and Mannie Lovitch was third for "Spring Interludes." Fourteen entries were received for the contest.

At meeting of March 18th, films presented included: "Thundering Waters," by Frederick Beach; "New Horizons," by Charles M. De Bevoise; "Historic Richmond Day," by Frank E. Gunnell; and "Day at the Zoo," by Harry Groedel.

## Seattle Amateur

Films entered in the vacation film contest were shown at the February 19th meeting of Seattle Amateur Movie Club, held at Epiphany Hall. In addition, the ACL picture, "Squeaky's Kittens" was exhibited, and a demonstration of proper use of lights for interiors.

## Film, Equipment, Exports Hit Peak For 1947

Despite mounting foreign restrictions, 1947 was the peak year in the export of raw film and motion picture equipment by American manufacturers, according to figures released in Washington by Nathan D. Golden, film consultant for the United States Department of Commerce.

Foreign shipments of negative and positive raw stock in 8, 16, and 35 mm., hit total of 454,905,051 linear feet with value of \$6,781,922. Figure represented increase of more than 160,000,000 feet over amount exported in 1946. Biggest increase was in the 35 mm. size—in excess of 75%.

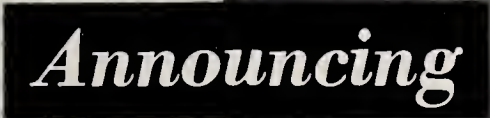
Exports of exposed 16 mm. and 35 mm. negative and positive features totalled 311,240,153 linear feet, in contrast to 284,415,599 for 1946.

During 1947, American manufacturers exported 388 35 mm. cameras; 4,959 16 mm. cameras; and 14,435 8 mm. cameras. Total of 39,701 projectors went abroad during 1937, including 6,936 standard 35 mm. sound projectors; 8,528 silent 16 mm. and 10,065 sound 16 mm. projectors; and 14,319 8 mm. projectors.

## ANFA Annual Convention April 22nd to 25th

Allied Non-Theatrical Film Association will hold its annual convention at the Hotel New Yorker, New York City, April 22nd through the 25th. A trade show will be held in conjunction with the convention for exhibition of latest products and services.





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# Kodak



## "A DOUBLE LIFE"

(Continued from Page 117)

they know their Broadway, and (what's more) they succeed in conveying its electric atmosphere to movie-goers who have never been farther east than Boise, Idaho.

The film opens with an exterior long shot of the main character entering the Empire Theatre in New York, one of the scenes shot in the actual locale during a three weeks location trip to Manhattan by cast and crew. As the action of the story develops, the audience is borne along on a rapidly-paced junket to Times Square, Greenwich Village, the Italian Quarter and one or two Park Avenue addresses. Through it all throbs an undercurrent of impending tragedy, punctuated with the staccato beat of the restless metropolis. There is the perfect illusion of reality dramatized by a combination of script, camera and direction that adds up to fine *theatre* and even better *cinema*. By the time the final title appears on the screen, the audience knows it has experienced a very special bit of celluloid.

### Shadow and Substance

In a generally superlative production it is always difficult to select one particular element as being outstanding. It may, therefore, seem like something of an understatement to say that Milton Krasner, A.S.C., has done a well-nigh perfect

job of photographing "A Double Life." His camerawork is *artistic* without being *arty*. His lighting is at once realistic and dramatic. His entire visual approach is so skillfully keyed to the mercurial action of the story, that not even the meaningful flicker of an eyelash is lost.

Krasner's expertly tailored photographic treatment resulted from a long series of pre-production conferences between himself, Director Cukor and Production Designer Horner. Before any actual shooting began, the Director of Cinematography had completely mapped out his camera approach.

"By using miniatures of all the sets that were to be used in the picture we precisely planned the camera set-ups for the entire production," Krasner declares. "We devoted a great deal of time to designing interesting set-ups that would carry the action without the necessity of using close-ups. Naturally, there were close-ups used in the picture, but on a greatly reduced scale."

Such a style allowed a fluid use of the moving camera and created a smoothly flowing continuity, since *cuts* were held to a minimum and compositions changed deftly from long shots to close-ups. The camera enters intimately, yet unobtrusively, into the action of "A Double Life." It is, at the same time, a participant and a spectator—now taking the audience by

the hand, now standing in objective judgment of the characters in the story.

The principal motivation of the plot depends strongly upon the alternately happy and morbid moods of the main character, played by Mr. Colman. In order to enhance the psychological dualism of his split personality, Krasner lighted each scene to closely fit the changing moods of the actor. When he was happy, the scene was brightly lighted. But during his depressed periods, the amount of light was diminished in keeping with the degree of depression. As a result, the audience senses the various moods of the player and responds accordingly.

Krasner's lighting is a visual treat—but more than that, it gives depth and substance to the screen narrative. Every lighting set-up is accurate to the source and dramatically forceful. The luxurious apartment of the sophisticated actress is illuminated by the intimate glow from discreetly shaded lamps; the shabby walk-up of the doomed waitress is thrown into coarse relief by the harsh light from a single overhead bulb; the cheap Italian restaurant is a pattern of neon and shadows, effectively symbolizing the wistful gaiety peculiar to the derelicts of all great cities.

But most effective of all is the lighting style used in the sequences shot backstage at the theatre. Everyone who has ever carried a spear in a Little Theatre production will recognize the hazy glare from the spotlights out front, the crowded shadows in the wings, the blinking pinpoints of light from the stage switchboard. Those who know their theatre only from the spectator side of the footlights will find it a fascinating experience to be taken onstage by the camera.

Describing his treatment of these sequences, Milton Krasner says, "Throughout practically all of the 'Othello' sequences I used a wide-angle lens so that I could stop down and carry a depth-of-field that would include the entire stage, regardless of where the players were standing. In these sequences, too, I deliberately let some of the lights hit the lens in order to give the feeling of an actor being on a brightly lighted stage. Instead of shooting from the audience toward the stage, as is customary, we shot most of our scenes either from reverse angles toward the audience or across stage in order to give a genuine backstage flavor to what was happening."

The stage setting, representing the murder scene from "Othello," is done in low-key cross-lighting that casts dramatic shadows on the faces of the players. Such lighting, combined with the exaggerated stage make-up worn by the actors, produces a weird effect that is much in key with the homicidal theme of the film. The close-ups of Mr. Colman's face in a frenzy of schizophrenic violence literally bring the audience face-to-face with sud-

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den death. It is strong, but thrilling, stuff to watch.

Midnight in Manhattan

Some of the most effective photography in the film is that which records night shots actually taken on the streets of New York. We see the dim reflections in the damp pavement, the light and shade of silent alleyways, the ghostly hulk of the "Elevated" looming in the background as the murderer approaches his victim and the crux of his own destiny. The technical excellence of these scenes is phenomenal, considering the difficulties involved in lighting large exterior locations at night—especially with portable equipment

Profiting by the experiences of the late Mark Hellinger in shooting his last film, "The Naked City," entirely in New York—the "Double Life" company set up a miniature studio in Manhattan, and was thus able to get realism with a minimum of blood, sweat and tears. More than a dozen different New York locations were used as settings for the action. In addition, nineteen separate sets (many of them multiple-room affairs) were constructed at the studio.

The stage sequences were shot in the enormous theatre set originally built in 1925 for Lon Chaney's "Phantom of the Opera," and used in dozens of other films

since then. For "A Double Life" it was remodeled for the first time into a modern Broadway theatre. Revamping included the installation of a revolving stage, the removal of several tiers of boxes, and the addition of a balcony.

The picture was before the cameras 72 days (including the sequences shot in New York), director George Cukor bringing it in 14 days ahead of schedule. Walter Hampden, dean of the American theatre, was brought to Hollywood to supervise the "Othello" sequences.

"A Double Life" is more than just an entertaining evening at the movies. It is a fine example of creative cinema aimed at an adult audience. It may well serve as a model for the type of picture designed to elevate the tastes of a movie-

going public obviously fed-up with a steady diet of candy-cane musicals and boy-meets-girl *meringue*. Despite Mr. Colman's masterful performance, it is the technicians behind the scenes who are the real stars of the picture. For their brilliant job of production, they deserve a "curtain call" and a rousing burst of applause.

BLACK AND WHITE • KODACHROME

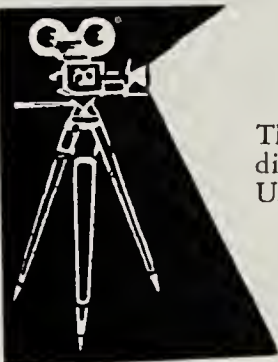
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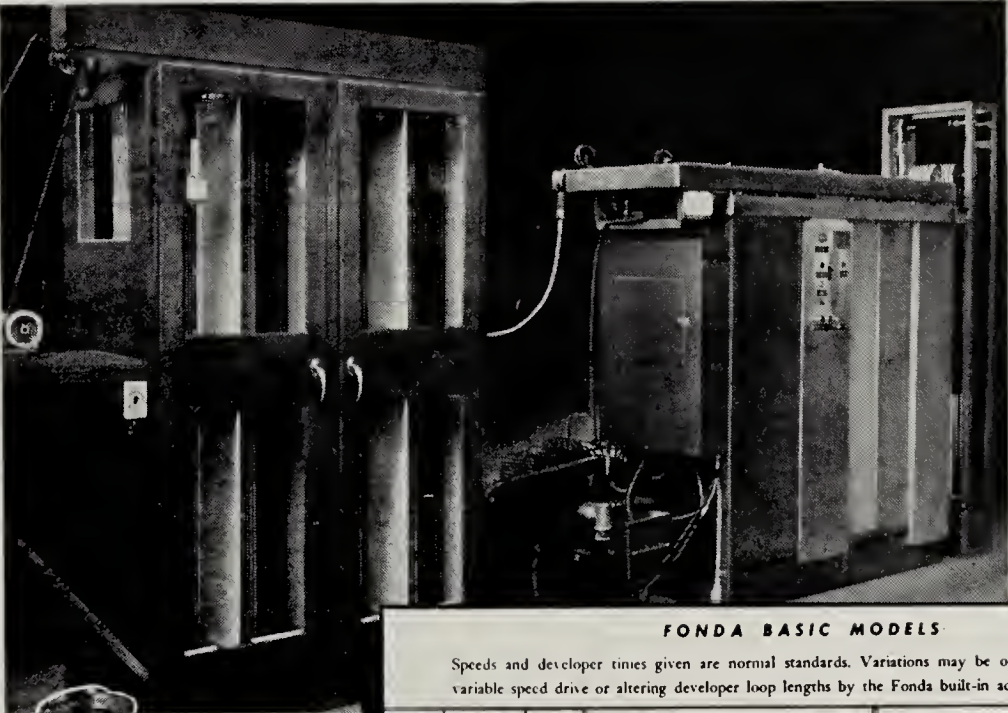
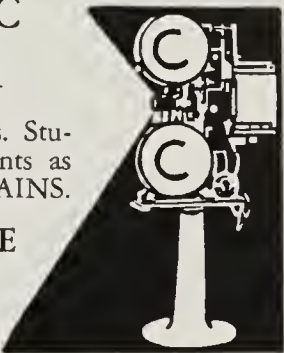
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FILM TYPE	FILM SIZE	MODEL NO.	APPROXIMATE OPERATING SPEEDS			APPROXIMATE MACHINE SIZES Includes Feed Elev. & Work Tables Both Ends					
			Positive 4 Min. Dev.	Negative 9 Min. Dev.	Reversal 6 Min. 1st. Dev. 6 Min. 2nd Dev.	WET END			DRY END		
						Length	Width	Reel Coiling	Length	Width	Height
Negative	16 mm.	F.1012 F.1021		29 fpm 58		6½ ft. 9	3 ft. 3	12 ft. 12	5 ft. 7	3 ft. 3	7 ft. 7
	16/35 mm.	F.3008 F.3018		17 34		6½ 9	3 3	12 12	5 7	3 3	7 7
Positive and Negative	16 mm.	F.1011 F.1014	65 fpm 131	29 58		9 13	3 3	12 12	7 9	3 3	7 7
	16/35 mm.	F.3017 F.3002	39 78	17 34		9 13	3 3	12 12	7 9	3 3	7 7
Reversal	16 mm.	F.1008	44	29	44 fpm	13	3	12	5	3	7
	16/35 mm.	F.3016	26	17	26	13	3	12	5	3	7
			Microfilm 3½ Min. Dev.		Anso Color 12 Min. 1st. Dev. 15 Min. Color Dev.						
Microfilm	16 mm.	F.1020	75 fpm			9½	3	12	7	3	7
	16/35 mm.	F.3015	44			9½	3	12	7	3	7
Anso Color	16 mm.	F.1009 F.1002			43 fpm 87	16 26	3 3	12 12	5 7	3 3	7 7
	16/35 mm.	F.3013 F.3004			26 52	16 26	3 3	12 12	5 7	3 3	7 7

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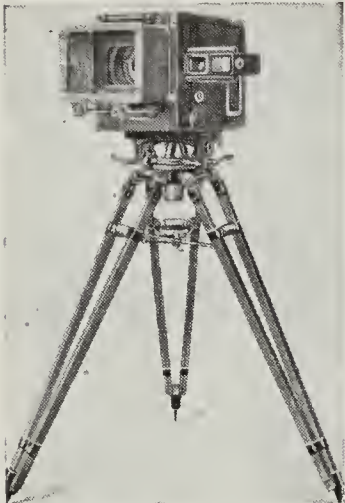
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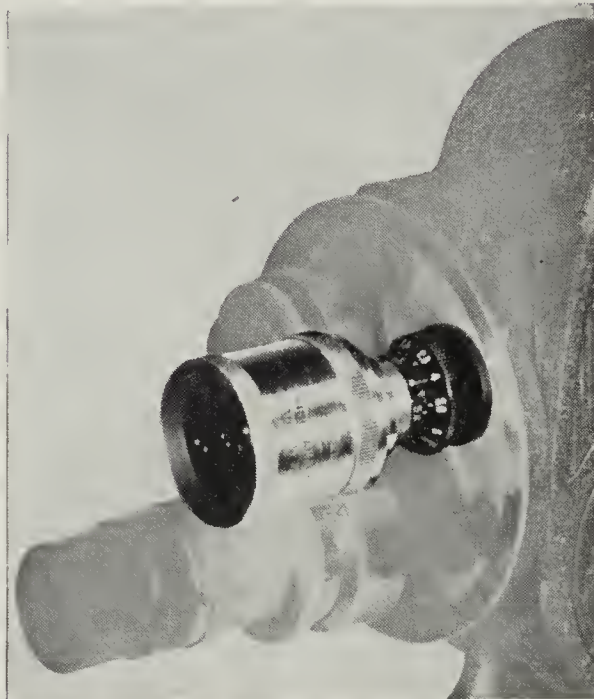
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## "Widor" Wide-Angle Lens Attachment by B&H



Doubling the angle of view of motion picture camera lenses, without altering light transmission or image quality, is claimed for the new "Widor" wide-angle lens attachment, just announced by the Bell & Howell Company. The Widor has the effect of reducing the focal length of lenses by half, resulting in a picture area twice as wide and twice as high as that of the lens without the attachment. Use of the attachment causes no reduction in the lens aperture, it is claimed, and no compensation need be made in the exposure setting.

The Widor lens attachment is the answer to such problems as taking group pictures at close range, or including large indoor areas where distance is limited. Matching viewfinder objective lenses are available, so Filmo owners can still "get what they see."

For further information concerning the Widor wide-angle attachment, write to Bell & Howell Company, 7100 McCormick Road, Chicago 45, Illinois.

## Studio Landmark for Sale

The former Edison studios in the Bronx, New York, which were originally built nearly 40 years ago for the production of Edison one and two reel pictures are for sale, with S. O. S. Cinema Supply Corporation handling negotiations for the owners. The six floor building has two sound stages, in addition to a vast storehouse of props and antiques, cameras and equipment, lights, and sound channels. For the past several years, soundies films for the Mills Panoram projectors were produced at the studios.

## New 16 MM. Film Catalogue

Princeton Film Center is currently issuing a new catalogue of 16 mm. sound motion picture films which lists titles and descriptions of sponsored or free pictures distributed by Film Center. Also included is section on educational and entertainment subjects available from its rental library. Free copies may be obtained with mention of AMERICAN CINEMATOGRAPHER by addressing R. O. Jones, Princeton Film Center, Princeton, N. J.

## Visual Education Scholarships

Pennsylvania State College announces that it has available six Graduate Research Fellowships in the field of sound motion picture research, with stipends ranging from \$1,000 to \$2,400. Those selected will work on research project to study the effectiveness of instructional films during 1948-49. Inquiries should be directed to Instructional Film Research Project of the college at State College, Pa.

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## Progress On 8 mm. Synchronized Sound

**S**YNCHRONIZED sound for 8 mm. films, aside from the current method of turntable disc musical accompaniment, is perhaps more close to general introduction than the average 8 mm. movie enthusiast realizes.

Much progress is being made with magnetic tape recording apparatus—in fact a number of 8 mm. makers have already adopted this system to add sound to their film subjects. But, according to reports, the added sound is generally musical accompaniment and only partial success has been achieved in securing proper synchronization of lip movement on the film with the dialogue on the sound tape.

From several sources comes word that research engineers have been able to flow magnetic powder along the sprocket-hole side of 8 mm. film, making a narrow alley of sound-track surface on which the sound can be magnetically recorded for very close synchronization with the picture. Progress has also been made in perfecting reproducing apparatus on projectors so that both sound and picture can be projected from the same machine.

Such a combination sound-picture 8 mm. projector will be particularly valuable to the advanced 8 mm. makers who desire to add synchronized sound—including dialogue—to their subjects. Let it be pointed out that these machines are not yet ready for the market, but seem to be on the horizon for presentation during the next year or two.

### Sound-Film Records

One 8 mm. sound-film machine, now in final stages for marketing, is a most ingenious and compact outfit which will initially be introduced for visual education and sales campaigns, but can eventually be adaptable for amateur movie makers.

Under development for the past six years, the portable machine will measure about 20 x 20 x 12 inches. Picture can be either shown on ground glass screen on one side of the box for small groups, or projected through an opening on another side to a screen on wall to provide picture eight feet wide.

The machine itself is very similar to a portable phonograph in appearance and construction, with the addition of a light source for projecting the picture. Film-sound records are containers approximately one-half inch thick, with the film strip threaded permanently within the container for automatic rewinding during projection. Sound is provided on an acetate disc—similar to a phonograph record—which is locked onto top of the container by patented method to always be in synchronization with the film. Pull-

down movement for film flow past light opening is housed in each record container, eliminating threading, while the automatic mechanism within the container itself brings start of subject back to the beginning after each running to eliminate rewinding.

To project a subject, the record is placed on turntable and secured by special locking device. Starting button is pushed, and when turntable gains proper speed the tone-arm automatically moves over to contact record and start picture. When film ends, the machine automatically turns off. The same picture can be repeated immediately, or another record substituted within a few seconds. Records can play continuously up to 10 minutes.

Because of the simplicity of operation, and minimizing of film strain or breakage during projection, the machines will be initially introduced for visual education in schools. However, eventual plans pro-

vide for availability to home movie makers who would want to add synchronized sound to their 8 mm. films.

Test reels projected have shown excellent synchronization of picture with dialogue and singing, with lip movement and action as perfect as a film sound track accompaniment.

The machines, to be introduced by Phonovision Corporation of America, Hollywood, were designed and developed by Ralph Like, film producer and engineer. Phil Goldstone, former independent film producer, financed the development and heads the company.

\*Five years ago only 600-odd companies were using 16 mm. motion pictures for sales and promotional purposes. This year it is estimated that 5,000 firms will use commercial films in some form. More than 23 major uses have been found for commercial films in such widely varied fields as education, sales, promotion, and public relations.

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## 136 April, 1948 • AMERICAN CINEMATOGRAPHER



## New Du Pont Sales Office

The Photo Products Department of the Du Pont Company has announced the opening of new district sales offices in Philadelphia and Atlanta. These offices were organized to improve service to customers in those areas and to relieve the load of the Eastern District office in New York, which has been serving the entire eastern part of the nation except New England.

Each of the offices will handle DuPont's full line of trade, industrial, motion picture and x-ray photo products, including films, papers and chemicals.

The Philadelphia District office is located at 225 South 15th St., Philadelphia 2, Pa., and the area it serves includes Pennsylvania, Delaware, Maryland, District of Columbia, southern New Jersey and sections of Virginia and West Virginia.

The Atlanta District office is located at 1115 Candler Building, Atlanta 3, Ga., and services the area including North and South Carolina, Georgia, Florida, Alabama, eastern Tennessee and a section of Virginia.

The Eastern District office has been designated as the New York District office and the territory it serves now includes New York, southern Connecticut and northern New Jersey.

Lloyd E. Barron is manager of the Philadelphia office. He has been Industrial Products Manager of the Du Pont Photo Products Department from the time he left the Army in 1945 until he took over this new assignment this year. Mr. Barron has a broad background in research and sales of photo products with Du Pont since 1936.

Fenner G. Headley has been appointed manager of the Atlanta office. He went to the new office from the San Francisco area, where he had been a technical representative for photo products since leaving the armed forces in 1945. Mr. Headley has been engaged in research and sales of photo products for Du Pont since 1936.

William D. Baker replaced Mr. Barron as Industrial Products Manager in the Wilmington office. He has been a technical representative in the New York District office since he was released from the armed services in 1946.

Harold A. Dumont continues as manager of the New York District office.

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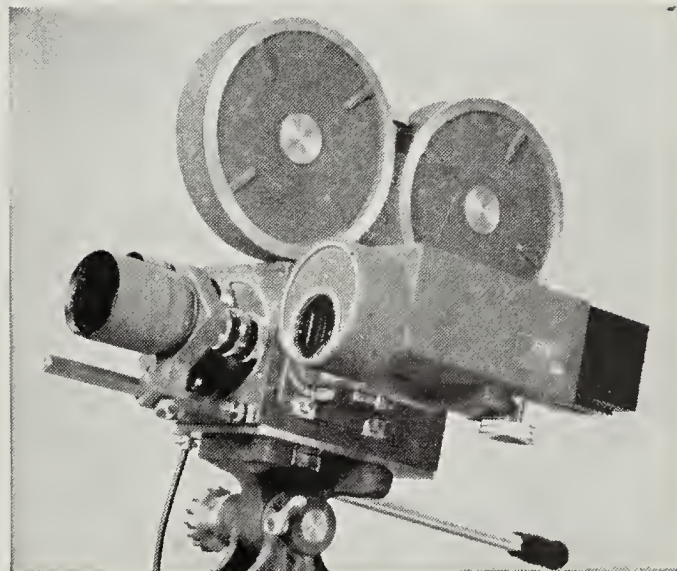
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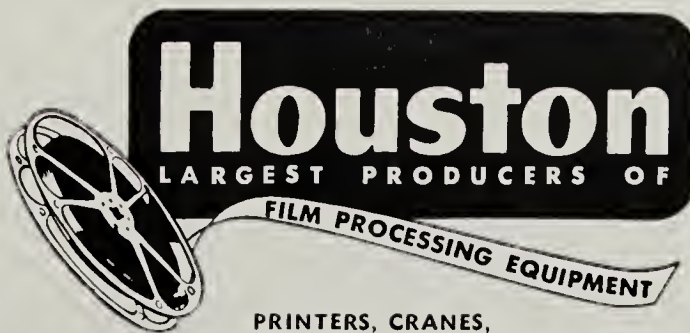
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## Academy Awards

(Continued from Page 119)

scenes, the simplicity with which they can be illuminated to depict any degree of illumination from bright sunshine to darkness, the lack of hot spots and photographic distortion have all contributed to noteworthy economies in production and improvement in photographic quality and realism.

*TO: Kurt Singer and the RCA Victor Division of the Radio Corporation of America for the design and development of a continuously variable band-elimination filter.*

This device, designed especially for the motion picture industry, permits the removal from original records of undesirable sound, such as arc whistles and camera or generator noises. It consists of a sharp filter which is pre-set to eliminate narrow frequency bands in the audible range from 300 to 9000 cycles. The use of this device makes possible the salvaging of many sound tracks which might otherwise have to be re-made.

*TO: James Gibbons of Warner Brothers Studios for the development and production of large dyed plastic filters for motion picture photography.*

The matching of photographic quality of simultaneously photographed interiors and exteriors has long been a problem in the motion picture industry. This development consists of a method of manufacturing dyed plastic sheets of optical clarity with specified filter characteristics and of sufficient size to be interposed between foreground and background. The use of these filters results in economies in lighting and rigging, as well as a definite improvement in controlling the quality of artificially-lit interiors and sun-lit exteriors which are photographed simultaneously.

## Kodak Price Increases Nominal

Despite substantial increases in wages and costs of manufacturing materials, prices of Eastman Kodak products have only increased 16% overall since August 1939. This fact was disclosed by Albert K. Chapman, Kodak general manager, in review of the company's selling price structure. He cited the figure as evidence of the "considerable restraint" exercised by the company in making necessary price increases, and said the controlling factor in every recent price change has been the company's long time policy of keeping product prices reasonable in order to expand output and widen the market for its products.

Price increase average has been held to moderate proportions, Chapman disclosed, "because of the high rate of production which spreads overhead over a large number of units and because of the steady development of new methods and techniques." Cine-Kodak film, despite recent price increase, is actually up only two per cent over 1939, he observed, but pointed out that excise taxes on cameras, equipment and most sensitized goods are in addition to prices received by Kodak.

## NEW FILM CEMENT

A new film cement, for splicing all types of 8 mm, 16 mm, and 35 mm, motion picture film, is announced by the Bell & Howell Company, Chicago, manufacturers of precision motion picture equipment.

Bell & Howell states that extensive tests in major Hollywood studios have shown the new cement to possess the combined virtues of great bonding strength and splicing speed, both highly necessary for professional use. Tests show further, it is claimed, that there is no distortion of film at the splice, and a minimum tendency for the cement to flow over the film or between the film and the splicer blades.

B&H 8 mm and 16 mm. splicing and editing equipment will be supplied with the new cement, and one-ounce, half-pint, pint, and quart bottles will be available.

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## Feature in Seven Days

(Continued from Page 115)

properly. True, we had a few extra takes—one time eleven of them, but generally speaking such retakes were exceptionally few, considering the fact that the picture was highly technical—a medical subject that had to be right.

We worked no later than seven or seven-thirty, with the exception of the last day—working until ten-thirty. We put in a total of 69½ hours on the production, actual shooting time, and I must say that it was a pleasure all the way. Every one concerned had a good time; no one apparently was rushed; and friendly “kidding” prevailed. Certainly, we worked fast, but as I have said, and it will bear repeating, every man was “on the job”; he was an expert in his line. There was very little lost motion, due to a smooth operating unit—including the “big boss”, Mr. Jim Doane, Mr. McCall, and all the rest—not forgetting Doc. Joos, who was Ass’t Director, Unit Manager, Cashier, etcetera . . . .

Our film was processed by Consolidated; Mr. Hirsch cooperated beautifully. There were no “retakes”, no scratched or abraded film, no “out-of-focus” scenes.

The name of the picture is “Street Corner”; it will be released in seven reels; required only 69½ hours to make, and, so I am told, has feature quality in every department.

As the Director of Photography, I used the same technique I’ve used in most of my feature productions. I did not accept “flat” lighting—a so-called requisite for “speed.” I diffused when necessary; used shadow effects, venetian blind effects, light-changes from day to night, night to day, etc . . . in fact, did everything to make the production photographically good. Naturally, we had to forego a few of the things that another day or two would have enabled us to do—not so much due to speed, but to costs. Night shots made during the day, to be effective, should have lights in evidence—but the cost was prohibitive. A little more “fin-essing” here and there would have helped, but our schedule wouldn’t permit it.

I’ve been very highly complimented on the job, from the president of Wilshire Productions on down through his very able staff. I’ll admit it isn’t Academy Award photography, but, thanks to my very fine assistants, I’m not ashamed of it, and I’m quite sure that those who view the production will not lose interest in the story because of some uninteresting photography.

Frankly, I was surprised that such speed could be made in production, and in these days of “forced economy,” perhaps it will interest others who are forced to recognize such things as “cost” and “speed” that, where efficiency and co-operation are

combined, “it can be done,” and with pleasure.

Note: My many thanks to the many whose names I failed to mention.

## United World Moves

Home offices of United World Films have been moved to new quarters at 445 Park Avenue. UW and its Castle Films division will use two floors of the building, which is also headquarters for the parent Universal Pictures Company.

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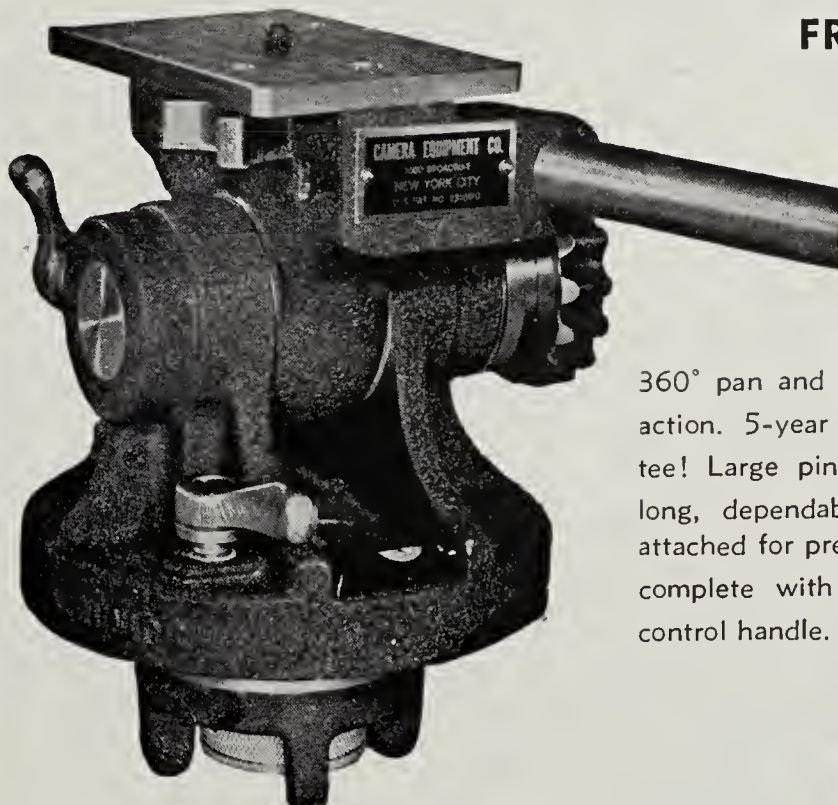
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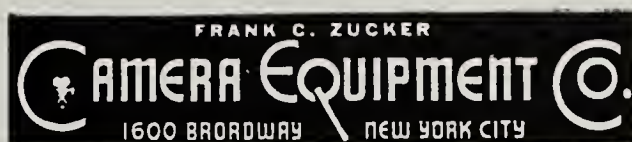
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# Current Assignments of A.S.C. Members

**M**EMBERS of the American Society of Cinematographers were engaged as Directors of Photography in the Hollywood studios during March as follows:

## Columbia

- Henry Freulich, "Winner Take Nothing," with Cameron Mitchell, Jane Nigh, Blake Edwards.
- Ira Morgan, "Sweetheart of the Blues," with Gloria Jean, Alice Tyrrell, Ross Ford, Toni Harper.
- Rex Wimp, "Texas Sandman," with Hoosier Hot Shots, Gloria Henry.

## Allied Artists

- Philip Tannura, "The Babe Ruth Story," (Roy Del Ruth Prod.) with William Bendix, Claire Trevor, Charles Bickford, Sam Levene, Fred Lightner, William Frawley.

## Eagle-Lion

- Ernest Laszlo, "Let's Live a Little," (United California Prod.) with Hedy Lamarr, Robert Cummings, Anna Sten.
- John Alton, "Canon City," with Scott Brady, Charles Russell, Stanley Clements, Robert Bice, Mary Meade, Robert Kellard, De Forrest Kelly.

## Independent

- Roy Hunt, "Mr. Joseph Young of Africa," (Arko Prod.) with Terry Moore, Ben Johnson, Robert Armstrong, Frank McHugh, Regis Toomey, Denis Green.
- Mack Stengler, "The Gay Intruders," (Seltzer-20th Fox) with John Emery, Tamara Geva, Hugh French, Virginia Gregg, Sara Berner, Roy Roberts.
- Jack Greenhalgh, "Lady at Midnight," (John Sutherland Prod.) with Richard Denning, Tom Dugan, Lora Lee Michel, Harlan Warde, Jack Searle.
- George Robinson, "The Creeper," (Reliance-20th Fox) with John Baragrey, Onslow Stevens, Eduardo Ciannelli, Janis Wilson, June Vincent, Richard Lane, Ralph Morgan, Phillip Ahn, Ralph Peters.
- Benjamin Kline, "Fighting Back," (Wurtzel-20th Fox) with Paul Langton, Jean Rogers, Gary Gray, Morris Ankrum, John Kellogg.
- Edward Cronjager, "An Innocent Affair," (James Nasser Prod.) with Madeleine Carroll, Fred MacMurray, Charles

"Buddy" Rogers, Rita Johnson, Louise Allbritton, Michael Romanoff.

## Metro-Goldwyn-Mayer

- Joseph Ruttenberg, "Julia Misbehaves," with Greer Garson, Walter Pidgeon, Peter Lawford, Elizabeth Taylor, Cesar Romero, Mary Boland, Dame May Whitty, Reginald Owen, Nigel Bruce.
- Robert Planck, "The Three Musketeers," (Technicolor) with Lana Turner, Gene Kelly, Van Heflin, June Allyson, Keenan Wynn, Angela Lansbury, Vincent Price, Gig Young, Robert Coote, John Sutton.

## Monogram

- Harry Neumann, "Stage Struck," with Audrey Long, Kane Richmond.
- Marcel Le Picard, "Smuggler's Cove," with Leo Gorcey, Huntz Hall, Gabriel Dell.
- Harry Neumann, "Partners of the Sunset," with Jimmy Wakely, "Cannonball" Taylor, Christine Larson, Leonard Penn, Steve Darrell.

## Paramount

- Sol Polito, "Sorry, Wrong Number," (Hal Wallis Prod.) with Barbara Stanwyck, Burt Lancaster, Ann Richards.
- Lionel Lindon, "Isn't It Romantic," with Veronica Lake, Mary Hatcher, Mona Freeman, Billy De Wolfe, Roland Culver, Patric Knowles, Pearl Bailey, Richard Webb.
- Charles Lang, jr., "The Tatlock Millions," with Wanda Hendrix, John Lund, Barry Fitzgerald, Monty Wooley, Ilka Chase, Robert Stack, Dorothy Stickney, Elizabeth Patterson, Dan Tobin.
- John Seitz, "The Great Gatsby," with Alan Ladd, Betty Field, Macdonald Carey, Ruth Hussey, Barry Sullivan, Howard Da Silva, Shelley Winters, Henry Hull.

## RKO

- George Barnes, "The Boy With Green Hair," (Technicolor) with Pat O'Brien, Robert Ryan, Dean Stockwell, Barbara Hale.
- Nick Musuraca, "Blood on the Moon," with Robert Mitchum, Barbara Bel Geddes, Robert Preston, Walter Brennan, Frank Faylen, George Cooper, Richard Powers.

## Twentieth Century-Fox

- Joseph MacDonald, "Street With No Name," with Mark Stevens, Barbara Lawrence, Lloyd Nolan, Richard Widmark, Ed Begley, Walter Greaza, Donald Buka.
- Harry Jackson, "Apartment For Peggy," (Technicolor) with Jeanne Crain, William Holden, Edmund Gwenn, Randy Stuart, Gene Nelson.
- Joseph La Shelle, "Leave It to the Irish," with Tyrone Power, Anne Baxter, Cecil Kellaway, Lee J. Cobb, James Todd, J. M. Kerrigan.
- Victor Milner, "Unfaithfully Yours,"

with Linda Darnell, Rex Harrison, Rudy Vallee, Barbara Lawrence, Kurt Krueger, Lionel Stander.

- Norbert Brodine, "Road House," with Ida Lupino, Cornel Wilde, Celeste Holm, Richard Widmark.

- Harry Jackson, "Burlesque," (Technicolor) with Betty Grable, Dan Dailey, Jack Oakie, June Havoc, Richard Arlen, James Gleason, Benita Wade.

## Universal-International

- Hal Mohr, "The Judge's Wife," with Frederic March, Edmond O'Brien, Florence Eldridge, Geraldine Brooks, Stanley Ridges, Will Wright, Mary Servoss, Clarence Muse, Fred Tozere, Harry Tyler, Ray Teal.
- Milton Krasner, "The Saxon Charm," with Robert Montgomery, Susan Hayward, John Payne, Audrey Totter, Cara Williams, Sam Levene, Heather Angel, Harry Von Zell, Curt Conway, Michael Branden, Bert Davidson.
- Frank Planer, "One Touch of Venus," (Artists Alliance Prod.) with Robert Walker, Ava Gardner, Dick Haymes, Eve Arden, Olga San Juan, Hugh Herbert, Tom Conway.
- Irving Glassberg, "Feudin', Fussin' and A-Fightin'," with Donald O'Connor, Marjorie Main, Penny Edwards, Percy Kilbride, Fred Kohler, Howland Chamberlain, Joe Besser.
- William Daniels, "Washington Girl," with Deanna Durbin, Edmond O'Brien, Don Taylor, Jeffrey Lynn, Ray Collins, Hugo Haas, Harry Davenport, Katherine Alexander, Griff Barnett, Nicholas Joy, Harry Cheshire, Charles Meredith, Raymond Greenleaf, Leon Belasco, Louise Beavers.
- Russell Metty, (Harold Hecht-Norma Prods.) with Joan Fontaine, Burt Lancaster, Robert Newton.

## Warners

- Woody Bredell, "Don Juan," (Technicolor) with Errol Flynn, Viveca Lindfors, Robert Douglas, Romney Brent, Alan Hale, Jerry Austin, Robert Warwick, Joanne Page, Helen Westcott, Mary Stuart, Tim Huntley, Barbara Bates, Fortunio Bonanova.
- Karl Freund, "Key Largo," with Humphrey Bogart, Edward G. Robinson, Lauren Bacall, Lionel Barrymore, Claire Trevor, Thomas Gomez, Dan Seymour, Harry Lewis, John Rodney.
- Sid Hickox and Wilfrid Cline, "One Sunday Afternoon," (Technicolor) with Dennis Morgan, Janis Paige, Dorothy Malone, Don De Fore, Ben Blue, Dick Walsh, Dick Taylor, Alan Hale, jr.
- Ted McCord, "Dames Don't Talk," with Virginia Mayo, Bruce Bennett, Tom D'Andrea, Richard Rover, Richard Benedict.
- Carl Guthrie, "Sunburst," with Dane Clark, Geraldine Brooks, S. Z. Zakall.
- Robert Burks, "A Kiss in the Dark," with Jane Wyman, David Niven, Wayne Morris.

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## 25 YEARS AGO

### With A. S. C. and Members

- Rene Guissart had completed his term contract with Alliance Film Corporation in England, and was immediately signed as Director of Photography with Wilcox Productions of London.
- W. S. Smith, jr. was completing the filming of "Masters of Men" for Vitagraph.
- Fred W. Jackman, then president of the A. S. C., was on location at Gardiner, Montana, directing "The Call of The Wild" in deep snow, with temperatures ranging below zero proving distinct handicaps in shooting during the short days.
- Jackson Rose completed photography on "The Last Race," a Snowy Baker starrer for Phil Goldstone productions.
- H. Lyman Broening and Perry Evans were staff cinematographers for Mack Sennett.
- Norbert Brodine was assigned to photograph the next Constance Talmadge feature for Joseph Schenck, and was finishing up camera work in association with Tony Gaudio on the Norma Talmadge special, "Within the Law."
- Ira Morgan was enroute to New York from Europe where he photographed "Enemies of Women," and will be in charge of photography for the Marion Davies starrer, "Little Old New York."
- Rudolph Bergquist was slated to photograph "Red Lights," Clarence Badger production for Goldwyn.
- Ernest Palmer, returning from a visit to England, stated that the cinematographer in England was thrown entirely on his own resources for his accomplishments, and was not surrounded by extensive technical staffs which were the rule in the Hollywood studios. He pointed out a number of difficulties—mostly natural obstacles due to climate and weather—and prophetically declared that most would disappear when English production was placed on a more efficient basis.
- John Seitz returned to Los Angeles following assignment on Rex Ingram's

"Where the Pavement Ends," which necessitated several months on location in Florida and Cuba.

- Georges Benoit was signed to photograph the first Sam Rork-James Young feature.
- Al Gilks completed the Gloria Swanson starrer, "Prodigal Daughters," for director Sam Wood at Paramount.
- Andre Barlatier was enroute to Chicago to take charge of photography on a production for W. S. Van Dyke.
- Allen Siegler was signed to term contract by Cosmopolitan Productions.
- Ben Reynolds was on location in San Francisco in charge of photography for "Greed," Eric von Stroheim's initial production for Goldwyn.
- Steve Norton was Director of Photography for Charles Ray's starrer, "Courtship of Miles Standish."
- Sol Polito was signed to photograph Edwin Carewe's "The Girl of the Golden West."
- Walter Griffin returned to Hollywood following a filming expedition all over North America for David Hartford productions.
- Henry Sharp was in charge of photography for "Lost," starring Madge Bellamy.
- Ross Fisher was shooting "Going Up," first independent starrer of Douglas MacLean.
- James Van Trees was in charge of photography on "Rustle of Silk," Betty Compson starrer directed by Herbert Brenon.
- Joe Brotherton was winding up camera work on "Chastity," Katherine MacDonald starrer.
- George Barnes was busy on "Desire" for director Rowland V. Lee.

### Sears, Roebuck Introduces Tower 16MM Projector

Sears, Roebuck and Company will introduce its newly-developed sound projector for 16mm. silent and sound film in the company's retail stores about May 1st. Designated as the Tower—Sears own brand name—it is a portable unit in single case with detachable side containing the speaker, and has carrying weight of 34 pounds.

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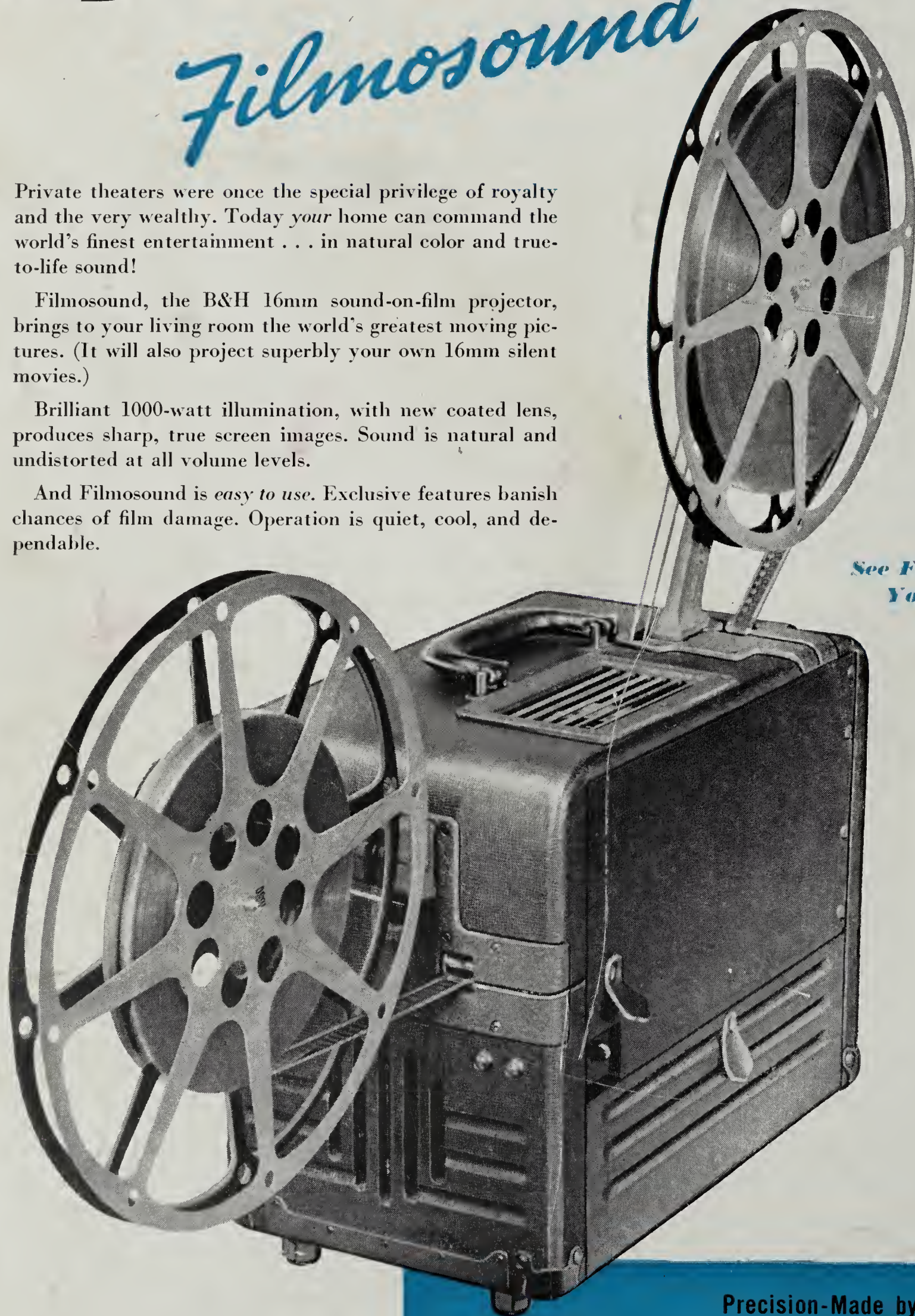
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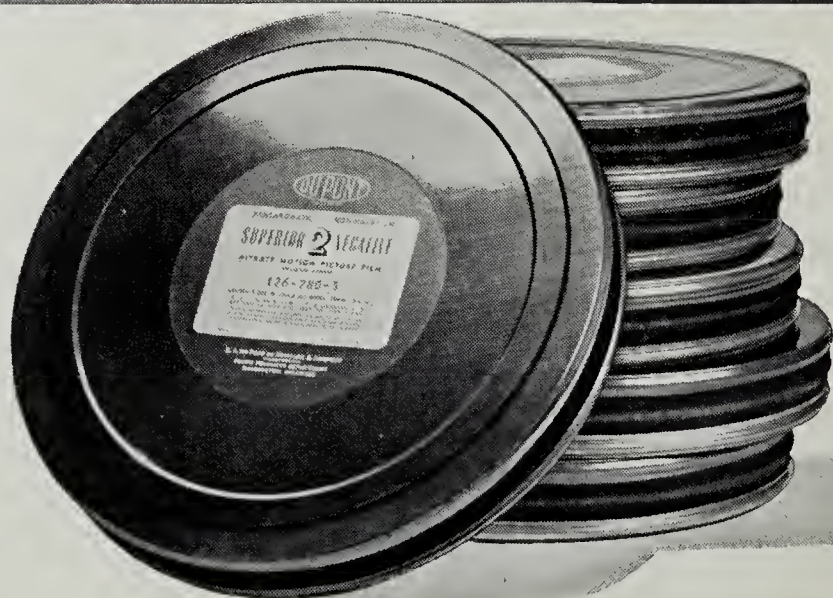
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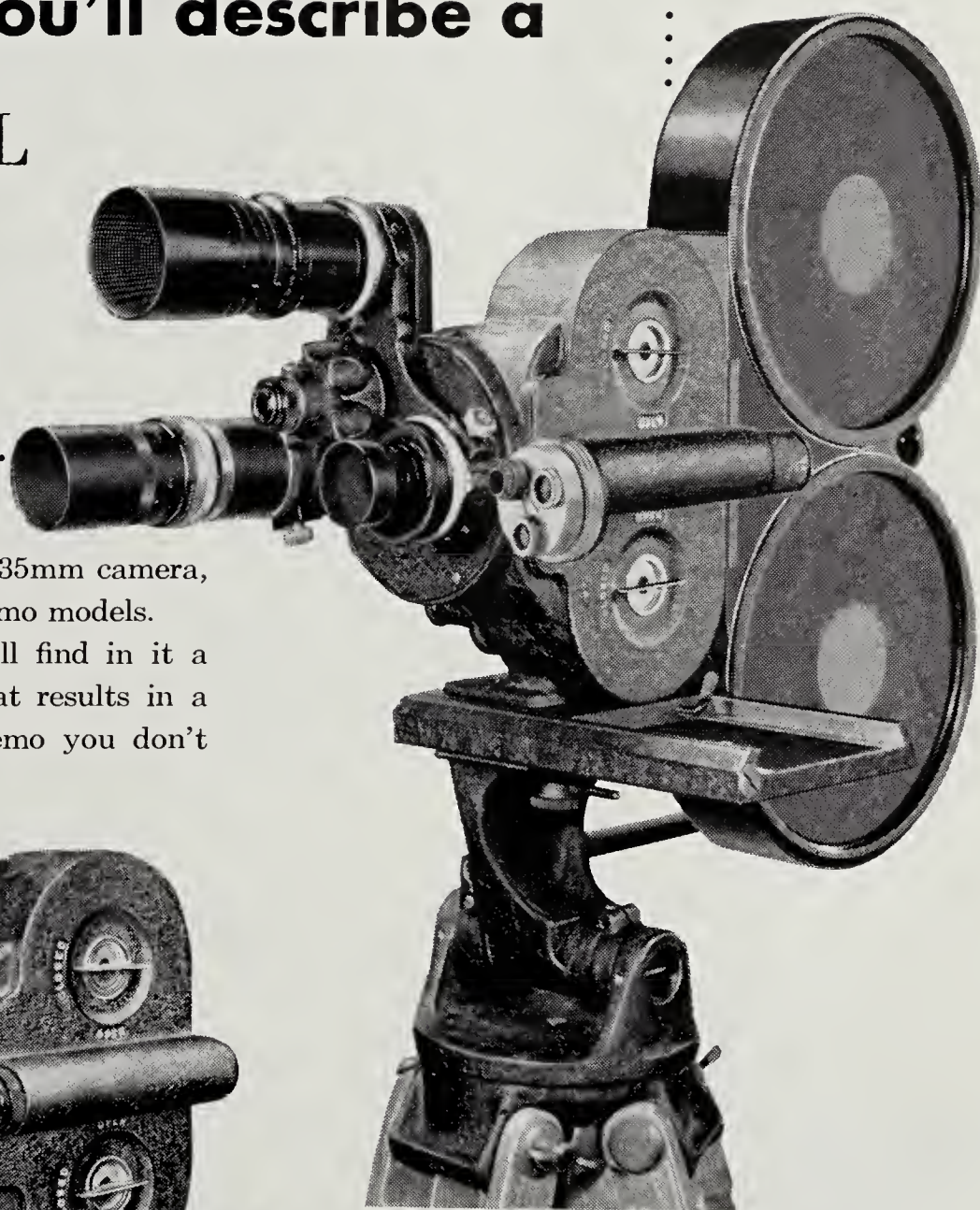
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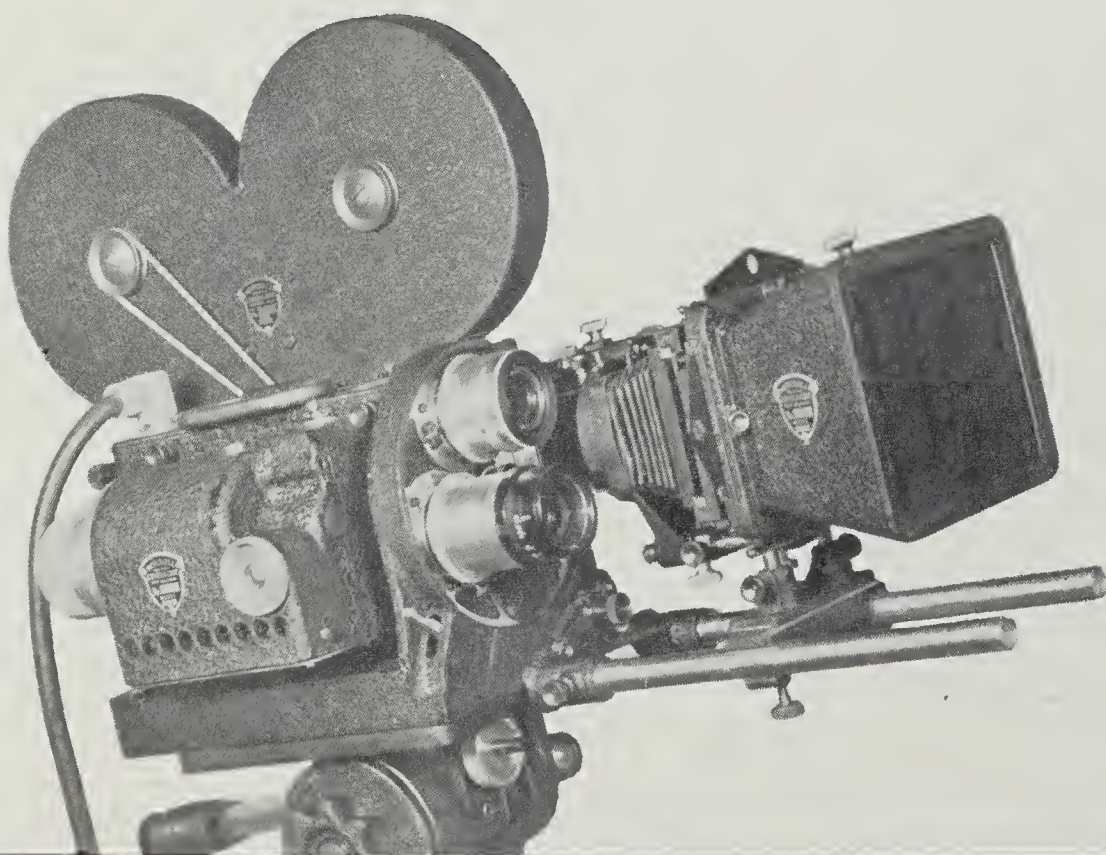


*Jerry Fairbanks*

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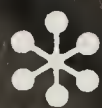
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# AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE CAMERA MAGAZINE

VOL. 29

MAY, 1948

NO. 5

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ON THE FRONT COVER—Frank Planer, A.S.C. (left), Director of Photography on "One Touch of Venus" for Universal-International, shows Director William Seiter a camera eye-view of Ava Gardner and Robert Walker in close-up scene with "dancing tripod." Latter is described in article on page 151.

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# FRANK PLANER, A. S. C., DEVISES "DANCING TRIPOD" FOR FOLLOWING CLOSE-UPS

**A**MONG the numerous complex camera setups on motion picture production which continually confront the Directors of Photography, the one providing for follow shots in closeup of a dancing couple calls for the fullest play of a photographer's ingenuity. Generally, such a scene is accomplished with a dolly shot, in which much valuable time is consumed in preparation for the movement over a wide area of the dolly during shooting.

Recognizing the need of some device which would accomplish the required action, and still prove a time-saver, Frank Planer, A. S. C., has developed what he terms the "Dancing Tripod" after several years of experimentation, and has applied for patents on the device which he expects will be placed in general use eventually in the studios for resultant large savings in time and production costs for various types of shots for which it can be adapted.

The illustration on the front cover, and the one on this page, visually describe the design and construction of the dancing tripod. The circular steel ring of six feet diameter has a triangle extension at one side for mounting of the camera. A rigid bracket attached on right of the steel ring has an attachment which fits into the small of the male dancer's back, with a double strap which anchors the dancer securely to the movable apparatus. The latter, it will be noted, moves easily on rubber rollers.

The camera is mounted at correct level to secure closeups of the dancing couple as they glide around the dance floor. As the players move about, the apparatus is carried along by the attachment to the actor's midriff, to continually keep the camera close to the dancing couple at all times and in fixed focus for the required closeups. The procedure provides a smoothness of movement, and greater ease to the dancers in enacting the scene in contrast to the former method of keeping in range of a moving camera dolly.

Following extensive experimentation and tests by Planer, he employed the

dancing tripod for the first time in Lester Cowan's production of "One Touch of Venus" at Universal-International studios in a dance sequence enacted by Ava Gardner and Robert Walker.

A 35 mm. Bell and Howell Eyemo camera was utilized, with capacity of 100 feet of negative. The Eyemo was most suitable because of its light weight which

greatly aided in ease of movement of the overall apparatus.

Although Planer first employed his portable tripod for the dance sequence closeups, he explains that it will find many uses in various types of closeups in production, and should be a valuable tool for the Directors of Photography to adapt for specific purposes.



Frank Planer, A.S.C., adjusts bracket around midriff of Robert Walker so latter will conveniently guide camera tripod for close-up shot of his dance with Ava Gardner in "One Touch of Venus." Director William A. Seiter, at right, watches the preparations.



# "THE NAKED CITY"

## TRIBUTE IN CELLULOID

By HERB A. LIGHTMAN

THESE are words in praise of a man and a motion picture. The man is the late Mark Hellinger—and the picture is his last and best film, "The Naked City," now in release by Universal-International.

It is hard for cold words on paper to pay tribute to the intensely human personality of Mark Hellinger. To those of us who were fortunate enough to know him, he always seemed more like a symbol than a mere mortal. He personified The Big City, the brashness of the prohibition era, the "stop-the-presses" school of journalism. Like his contemporary, the late Damon Runyon, he was a bard of the modern age—a chronicler of the complex, urban, sometimes-hysterical 20th Century in America.

His short stories, of which he wrote one a week for many years, were savory slices of life, jacked with humor and pathos and

the emotions of just plain people. He wrote of the "guys and the dolls," the "bums and the molls." His reputation as a "square guy" won for him the respect of government and police officials as well as that of New York's supposedly most venomous underworld characters.

As a person, Hellinger was as genuine as a silver dollar fresh from the mint. His colorful vocabulary gave voice to a dynamic personality, and when he talked you hung on every word—no matter what the subject. His words were plain, and sometimes profane—but they were rich and warm and descriptive, and there was *heart* in them. It was natural that his particular brand of genius should find expression in the dramatic medium of the motion picture. For the past several years a Hollywood producer, he was just beginning to hit his best stride with pictures like "The Killers," "Brute Force," and

now "The Naked City." His passing—though a great personal loss to those of us who knew him as a friend—is an even greater loss to a motion picture industry which, at the moment, sorely needs the original, vital, and human touch which he brought to the screen.

### East Side, West Side—

Mark Hellinger was a clever short story writer, an imaginative film producer—but first and foremost, he was a *good reporter*. He was happiest when chasing down a hot news story, the kind of yarn that millions of people would read next morning while gulping their coffee or hanging from a subway strap. He had a favorite stomping ground, New York City—and he loved it with a faithful passion, just as a Frenchman loves the boulevards of *Paris*, or an Irishman loves the emerald hills of Erin. It is fitting, then, that his last picture should be a newspaper story on film, with New York City as its locale.

That "The Naked City" was a labor of love is evident from the moment the opening scene appears on the screen. There are no credits, no title, no lettering of any kind—just an aerial shot of Manhattan at dawn. Then, Hellinger's voice is heard on the sound track explaining that this is the story of a day in New York. He speaks just as he would speak to a crony down at *Joe's Bar and Grill*, commenting on the urban scene with simple, direct and richly descriptive words. We see the great city struggling to wakefulness—yawning, sitting up and rubbing its eyes. Then we see the milk-man making his rounds, the crowds rushing for the subway, the wheels of urban commerce slowly beginning to turn. Finally, settling down to the crux of the narrative, the camera noses its way through the window of a hotel room where a young woman is being slowly



(Left) The late Mark Hellinger, producer of the Universal-International film, "The Naked City" discusses the script with his director, Jules Dassin. Producer and director, both native New Yorkers, injected perfect realism into the photoplay. (Right) Director of Cinematography William Daniels, A.S.C., (top) prepares to shoot one of the dusk scenes which add authenticity to the mood of "The Naked City."





(Left) The camera crew on the Universal-International film, "The Naked City" prepares to shoot a scene typical of the sidewalks of New York. Portable lighting units add "fill" light to the natural "key" light. (Right) Filming of a sequence progresses on a structural scaffold twenty three stories above busy Park Avenue in New York. The film uses the entire city as a backdrop, shows New York as New Yorkers know it.

and systematically strangled by two thugs.

From that point on, the camera goes behind the scenes to show the step-by-step unraveling of the mystery by a venerable detective (played by Barry Fitzgerald) and his young assistant (played by Don Taylor). But to say that "The Naked City" is just another *whodunit*, is to make a brazen understatement, for the crime itself and its ultimate solution is secondary to the background against which it is portrayed. The film is primarily a story of New York; not the New York the tourists see when herded about from Rockefeller Center to Chinatown by harassed guides wishing for an easier way to make a liv-

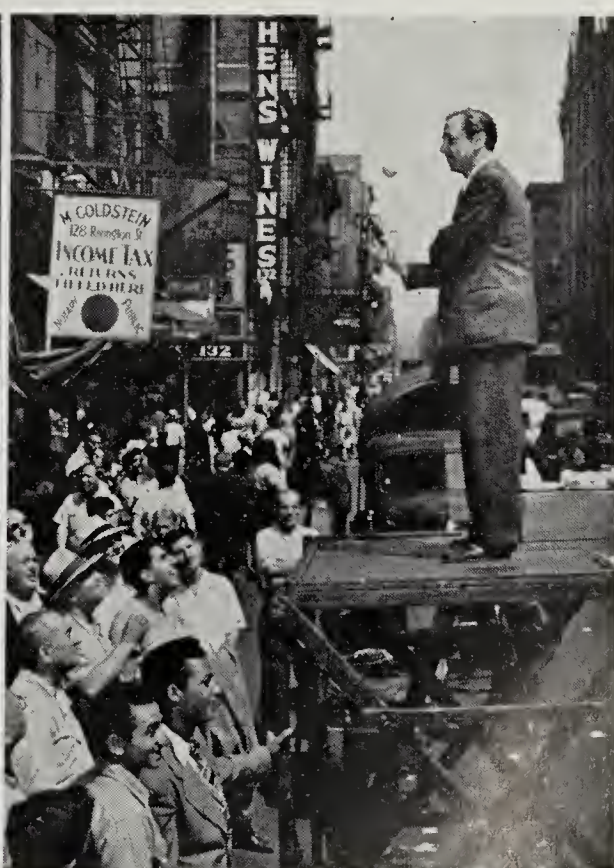
ing. It is not even the New York of the native Gothamite, grown (like the tree) in Brooklyn—or born and bred in the shadow of Manhattan's spires. It is the New York of the police reporters, those unsung worshipers of the typewriter who exist from deadline to deadline. Behind the graphically journalistic, often staccato, approach of the camera, one can see the Mark Hellinger of fifteen years ago doggedly following up the story of a socially insignificant young woman who was strangled and left floating in a bath-tub full of water. It is the kind of everyday murder you read about in the front page headlines and forget by the time you've turned to the comic page. And yet, pro-

jected as it is against the backdrop of a reporter's Manhattan, it becomes documentary drama—and intensely stimulating screen-fare.

### The Soul of the City

Jules Dassin, who directed the film, is, like Hellinger, a native New Yorker. His understanding and affection for the sprawling metropolis underscores the flawless technique he has used in etching the story's action onto celluloid. He has captured the sprightly pace so typical of Manhattan, the sordid claustrophobia of the lower East Side. He has blended realism and drama into a perfectly balanced

(Continued on Page 178)



(Left) During night shooting on the Universal-International film, "The Naked City," Director Jules Dassin checks a composition preparatory to filming an exciting chase sequence. Lighting units in the background consist of four conventional photoflood lamps in a metal frame. High up in the framework of the Williamsburg Bridge, cameraman and director prepare to cue the action of the scene. (Right) During filming of "The Naked City," crowds were lured away from the camera by a juggler placed nearby as a decoy.



# EXTREMELY WIDE ANGLE LENS FOR AERIAL MAPPING

IT is well known that the effective exposure through a photographic lens is a maximum at the center of the negative and decreases rapidly toward the edge. Various techniques have been used in attempts to reduce this variation of image illumination at different points in the lens fields, but all methods have required special photographic manipulation. Recent investigations at the National Bureau of Standards by Drs. Irvine C. Gardner and Francis E. Washer have led to a more scientific and valid analysis of the causes of uneven negative exposure. A better understanding of such principles explains the discrepancies that other investigators have encountered in studying the variation of relative illumination from center to edge of the focal plane, and should aid materially in the design of photographic lens systems where even exposure is important. In particular, it puts the development of extremely wide angle lenses on a sounder basis and points the way toward substantial savings in airplane mapping.

The reduction of effective exposure arises from two causes, vignetting and

the cosine-fourth-power law. When a beam of light passes obliquely through a photographic lens, the aperture of the diaphragm is usually not entirely filled with light which reaches the sensitive emulsion because portions of the beam are obstructed by the ends of the lens barrel and the edges of the component lenses. This obstruction of the light is termed vignetting and is nearly always present for the marginal parts of a picture. The elimination of vignetting by making the diameter of the lens components large enough to permit the entire oblique beam to pass through the aperture of the diaphragm without obstruction presents certain prohibitive disadvantages. The lenses would be much larger and much more expensive. Furthermore the correction for the aberrations in a lens is often such that the additional light admitted by the larger components would adversely affect the quality of the image. It is difficult to make a general statement regarding vignetting, inasmuch as each lens constitutes a special case which must be individually considered.

The second cause of the decreased effective exposure at the edge of the picture, the cosine-fourth-power law, has some features which admit of generalization. In the absence of vignetting, if the lens is free from distortion, the effective exposure for points on the negative will be approximately proportional to the fourth power of the cosine of the angles between the corresponding object points and the center of the field.

This variation in effective exposure is not particularly important for such common applications of photography as portraiture or landscape photography, because the composition is usually such that the central parts of the picture are the most important, and a degradation of detail and lack of contrast in the marginal parts of the picture may even add to the quality of the composition. On the other hand, for professional motion picture photography the action may, on occasion, take place on any part of the screen, and an evenly exposed negative is desired. On studio sets it is customary to correct for uneven exposure by properly distributing the lamps to increase the illumination of the objects that appear near the edge of the picture.

So far as the effect of the cosine-fourth-power law is concerned, it is evident that the diminution of exposure at the edge will be greater as the angle of the field of view is increased. To illustrate, if the field of view is  $40^\circ$  ( $20^\circ$  half-angle) the exposure at the edge of the field is approximately three-quarters that at the center. On the other hand, for fields of  $90^\circ$  and  $110^\circ$  (half-angles of  $45^\circ$  and  $55^\circ$ ) the exposures at the edge of the field are one-quarter and one-ninth that at the center, respectively. When it is realized that these computed exposures are further reduced by vignetting, it is apparent that pictures with black-and-white film will be difficult, and, because of the less latitude, photographs with color film will be impossible for the wide-angle lens.

Dr. Gardner's investigations of the validity of the cosine-fourth-power law show that the cosine-fourth-power relation is not rigorously true but only approximate, and that departures from it can be achieved. When the object being photographed is at a great distance and the diaphragm is in front of the lens, the



Aerial photographs made with the German Pleon wide-angle are characterized by pronounced distortion of the image (left) that increases towards the outside edge. This effect is corrected for projection or printing (right) by a rectifying optical system that introduces positive distortion—i. e.: marginal portion magnified more than the center.



law holds for a distortion-free lens. If the diaphragm is within the lens, as in most commercial lenses, the entrance pupil, which is the image of the diaphragm formed by the part of the lens between it and the object, may be so affected by aberration that it is effectively larger for oblique beams. Consequently, the relative exposures of the marginal parts of the photographic field are significantly greater than would be predicted on the basis of the cosine-fourth-power law.

Perhaps the most important method of increasing the effective exposure at the edge of the field of a lens is by the introduction of a large amount of negative dis-

tortion. This result is one that can readily be understood. With negative distortion the scale of the picture for the outer portions is very much smaller than for the central parts of the picture. In effect then, the outer parts of the picture may be said to be made with a lens of shorter focal length than the axial parts. Therefore on this basis, the relative aperture is greater for the marginal parts than for the central part of the picture.

A quantitative consideration of the question indicates that the effective exposure will be uniform over the entire plate, in the absence of vignetting, even if the field of view is as great as  $180^\circ$ , provided that the distortion is such that  $r' = f \sin B$ .

In this equation,  $r'$  is the distance from the center of the plate to a given image point,  $f$  is the focal length of the lens for the axial region of the picture, and  $B$  is the angle, measured in the object space, between the corresponding object point and the axis of the lens. Equation 1 applies rigorously only when the diaphragm is in front of the lens and the object is at an infinite distance.

For a distortion-free lens, the corresponding equation is  $r' = f \tan B$ , where the symbols are the same as in equation 1. It should be emphasized that the distortion, indicated by equation 1 is very large and renders the picture quite useless for pictorial purposes unless it is subjected to a second process by which the distortion is removed. For example, if the focal length is four inches and  $B = 45^\circ$  (total field of view equals  $90^\circ$ ), the distortion is more than one and one-eighth inches.

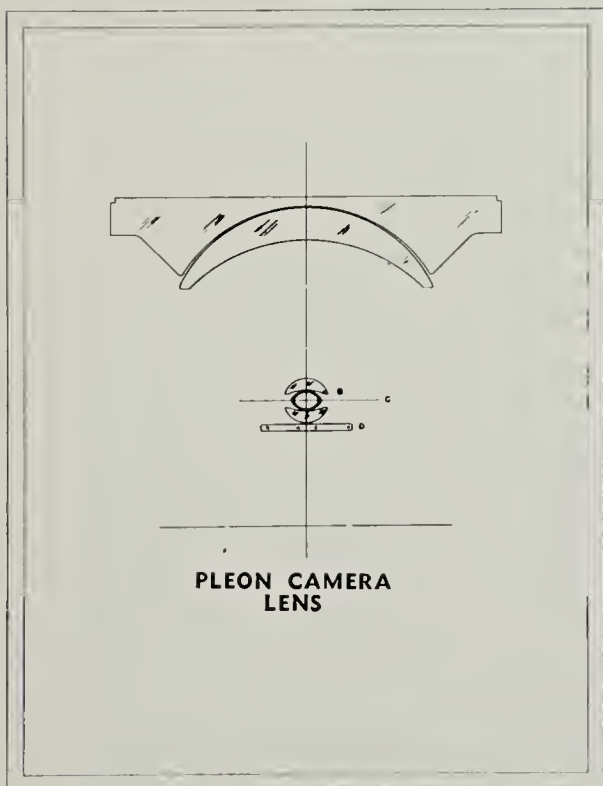
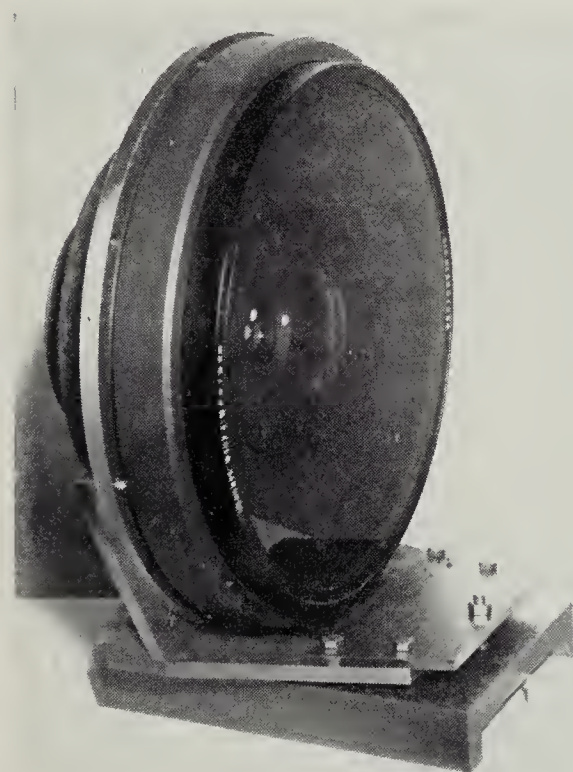
For many purposes this large distortion and the subsequent special optical projection method by which it is removed are too large a price to pay for the evenly exposed negative. Mapping by means of airplane photographs, however, is an important example in which the additional photographic manipulation is amply justified.

In the process of airplane mapping the elevations of points are determined by a stereoscopic method. Consequently, each point of the terrain must appear in at least two photographs, thus providing an image for each of the observer's eyes, a requisite for stereoscopic observation. In practice, as an airplane proceeds in a straight flight the exposures with a camera directed vertically downward are made at such intervals that two successive pictures overlap 60% in order to insure that each point will appear in two pictures. In making observations on a pair of photographs to determine contours or to determine the elevations of individual points, it is necessary that the photographs be carefully adjusted with respect to each other, a process termed orientation, in order that the

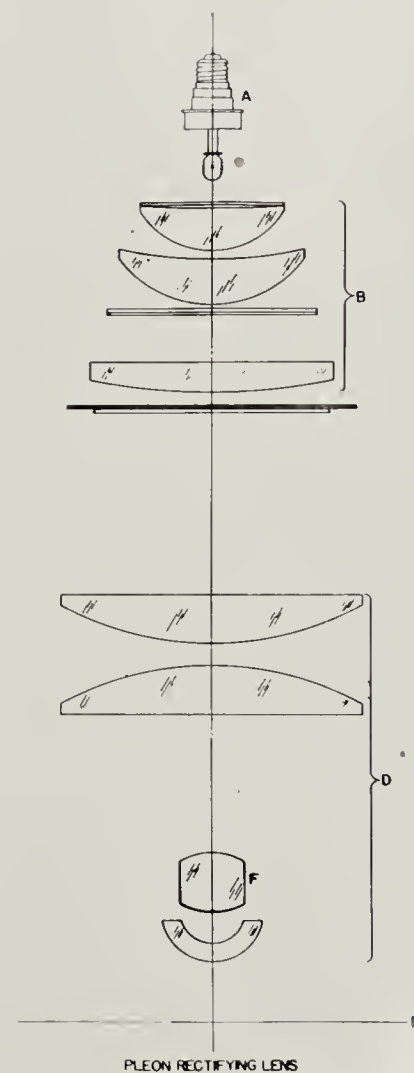
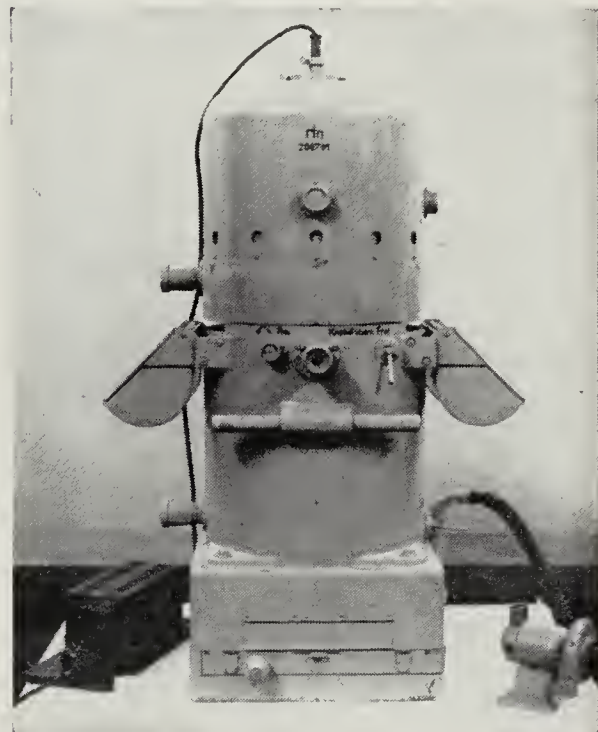
values read from the plates may be correct.

Orientation is a difficult process requiring considerable time of skilled personnel. After it has been accomplished, observations can be made on but half of each photograph, because only those ob-

(Continued on Page 181)



Figures 2 and 3. Above, photo of Pleon wide angle lens on testing stand; below, sectional drawing showing arrangements of optical parts. Designed to utilize large amounts of distortion for wider field of view, the focal length of lens is only  $2\frac{3}{4}$  inches, but outer lenses are about a foot in diameter, with view field of  $130^\circ$ .



Figures 4 and 5. At top, the German rectifier or copying device making a distortion-free print by optical projection from distorted negative obtained with Pleon lens. Below is sectional drawing of arrangement of optical parts of rectifier.



# CHARLES CLARKE ELECTED PRESIDENT OF A.S.C.

Charles G. Clarke has been elected President of the American Society of Cinematographers for the coming year. He succeeds Leon Shamroy, who held the post for the past year and who will be in Italy for several months as Director of Photography on a Twentieth Century-Fox production to be made in that country by Henry King.

Five members of the Board of Governors were re-elected for three year terms by vote of the A.S.C. membership. They include: Clarke, John W. Boyle, Sol Polito, Ray Rennahan, and William V. Skall. In addition, five alternate board members were elected for a one year period, and they will function when various regular board members are absent from Hollywood on distant locations. The alternates are: Ernest Haller, Sol Halprin, Arthur Miller, Hal Mohr and Joseph Ruttenberg.

## Other Officers

Other officers, in addition to Clarke, selected within the board of governors panel to serve for the coming year, are: Arthur Edson, First Vice President; Alfred L. Gilks, Second Vice President; William V. Skall, Third Vice President; Ray Rennahan, re-elected secretary; John W. Boyle, re-elected Sergeant-at-Arms; and Fred W. Jackman, re-elected Executive Vice President and Treasurer for the sixth successive year.

In unanimously re-electing Jackman, the board passed a resolution extending thanks for his enthusiastic and capable direction of the Society's affairs which has been greatly responsible for the progress and success of the organization.

Complete Board of Governors of the A.S.C. for the coming year—in addition to the officers and alternates named above—will include: John Arnold, George Folsey, Lee Garmes, Sol Polito, Charles Rosher, John Seitz, Leon Shamroy, and Joseph Walker.

## Clarke Top Cinematographer

President Clarke is recognized as one of the ablest Directors of Cinematography in the Hollywood studios; and has been under contract to Twentieth Century-Fox

studios for many years, where he has contributed outstanding photography to numerous productions. During the past three years, most of his work has been in Technicolor, including "Captain From Castile"; "Green Grass of Wyoming"; and "Bob, Son of Battle." The latter assignment was noteworthy in that it was the first production to be shot entirely in Technicolor monopack. He is currently photographing "That Wonderful Urge," with Tyrone Power and Gene Tierney.

Clarke started in the motion picture industry 30 years ago in the laboratories of

D. W. Griffith, and after several years of basic training, joined the camera staff of Paramount. He became a member of the A.S.C. in 1925, and was elected a member of the Board of Governors the following year. With the exception of a few years, he has been on the board since then, and served as an officer much of the time. His interest in the success and progress of the organization has been continually demonstrated—a fact the members recognized in voting him to the presidency.

In accepting the post, Clarke stated: "I am proud of the accomplishments of the American Society of Cinematographers since its formation nearly 30 years ago, and feel signally honored to be selected to head the organization for the coming year. However, the continued progress of the A.S.C. depends on the wholehearted support and cooperation of the entire membership; and especially the counsel and guidance of the Board of Governors. But past records establish that such support has been provided to the maximum and will continue, to further the accomplishments and progress of the cinematographic art, both in Hollywood and throughout the world."



CHARLES G. CLARKE, PRESIDENT OF A.S.C.



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**CAMERA REPORT**

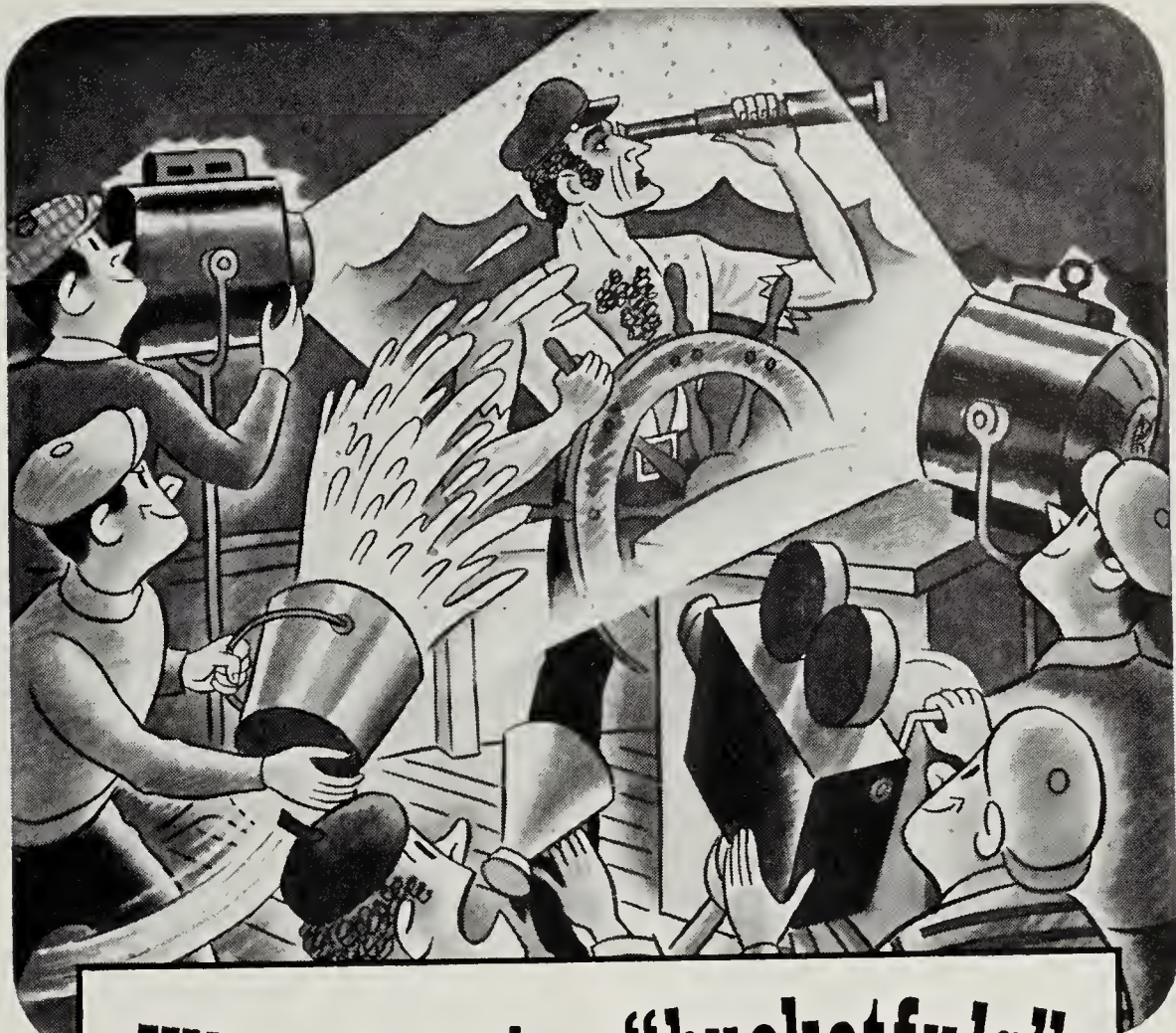


## 25 YEARS AGO

### With A.S.C. and Members

- David Abel was at Fox studios prepping his next assignment.
- Karl Brown had the camera assignment on "Hollywood," James Cruze production for Paramount.
- John Arnold was photographing "The Fog," for Graf productions at Metro.
- Robert Newhard and Charles Stumar were at Universal, jointly responsible for the splendid photography of the Lon Chaney starrer, "Hunchback of Notre Dame."
- Photography for "Wolf Fangs" at Warners was under the direction of Frank B. Good.
- Faxon Dean was completing camera work on "Sixty Cents an Hour," initial Walter Hiers starrer for Paramount.
- Al Gilks was Director of Photography on "Bluebeard's Eighth Wife," Gloria Swanson starrer at Paramount directed by Sam Wood.
- Kenneth MacLean was assigned to photograph the "You Know Me Al" series with Lee Moran starred.
- Walter Griffin returned from Truckee, where he filmed locations for "The Man Who Cheated"; while Fred Jackman was at Truckee directing snow sequences for "The Call of the Wild," from the novel by Jack London.
- Harry Perry had been signed by Cosmopolitan to handle photography on a special production.
- William Marshall completed "Tea With a Kick," and moved over to Robertson-Cole to photograph a western feature.
- Floyd Jackman focused his camera on Bull Montana's comedy, "The Eskimo Spy."
- Philip Rosen, directing a picture on location near Bakersfield, fractured his leg in an auto accident. Paul Perry and Robert Kurrle rushed him to the hospital for treatment.
- Photographic assignments at Goldwyn Studios (now M-G-M), included: John Mescall on "Souls For Sale"; John Stumar on "The Spoilers"; Rudolph Bergquist on "Red Lights;" and Ben Reynolds on "Greed."
- James C. Van Trees was elected president of the A.S.C.; with John Seitz, first vice president; Philip Whitman, secretary; and Frank B. Good, treasurer.

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# ART DIRECTION FOR "JOAN OF ARC"

By AL VAUGHAN

"THIS will give you an idea of the picture's size. We drained 150 acres of land near Balboa, California, for the skirmish scene in which Joan is captured."

Thus did Richard Day, art director for the RKO Radio release of Sierra Productions' "Joan of Arc" begin telling about his vast blueprint for medieval sets in the Ingrid Bergman starrer, which Walter Wanger produced for RKO release.

Besides the undertaking at the Balboa marshlands, the entire Hal Roach lot was utilized to shoot the picture—a total of six sound stages in continuous use for a 90-odd-day schedule.

The grandeur of Gothic architecture in its most complicated form will be seen in this authentic motion picture classic about the tragic life of the peasant maid from Domremy.

"Middle Gothic," said Day, "is a real headache. There were so many didos on buildings that we had to take some license. We had to make it more severe

so that the audience would notice the actors more than the statuary."

The drainage project resulted in a reproduction of the marshland at Compeigne where Joan was captured in a brief skirmish with the English and Burgundians. The scenery around Balboa duplicates that section of France, but the designated area happened to be under 12 feet of water at the time it was chosen to be a monster movie set.

Another famous battlefield reproduction will be the one at Orleans. From ancient documents, and after months of research, Day built the double battlements of Boulevard and Tourelles, two fortresses connected by a drawbridge over a moat.

Also constructed on the sound stage was the interior of the world renowned cathedral at Rheims in which Ingrid attends the coronation of the French king, played by Jose Ferrer. Contrasting with the color and austerity of the great church is the drab prison at Rouen where Joan was held during her trial for heresy.

The lovely set for the castle garden at St. Denis had a large lawn on which the King plays croquet. For this scene a local landscape gardener grew special grass for months in advance of the shooting. It was laid in three foot sections in forty square feet and had to be re-landscaped every two days of filming since the hot Technicolor lights turned it yellow within forty-eight hours.

"An uncompleted sound stage," said Day, "turned out to be a blessing in disguise when we thought it would be our greatest obstacle. When we took over it had no floor.

"But, necessity being the mother of invention, we decided to dig. This gave us a chance to make an authentic contour of a section of French countryside near Domremy. We used it for the burned village where we first see Joan. By the end of the picture it had become the double fortress of Boulevard and Tourelles for the Battle of Orleans. We dug a real moat around the fortress six feet deep and 15 feet wide. That stage was a major operation of my task force."

Day's task force was a special crew of approximately 50 men of various crafts who constantly altered the stage basement for a total of fifteen different sets including countryside, battlefield, wayside shrine and medieval highway. A bulldozer remained on continuous duty making hills and valleys and scraping dirt onto the perimeter altering the face of the French nation.

"I spent seven months," Day said, "indoctrinating myself on early 15th century architecture which is the most involved in world history. I spent about a month at the Congressional Library in Washington studying not only Gothic style but the customs and habits of the period."

Day said his big problem was stripping the film architecture of non-essentials.



Joan of Arc in white armor is scaling Richard Day's reproduction of the Fortress des Tourelles (left), while Day's conception of the market place at Rouen is shown on right.





At left, Day's interpretation of the famed castle garden at St. Denis. The sombre and chilling courtroom where Joan undergoes rigorous prosecution for heresy is shown at right.

Colors of the period were flamboyant. He had to devise means of merely suggesting the riotous hues that were part of every background and still keep them muted enough so that the characters would stand out. The Technicolor is in low key.

"There is a definite progression of color," he said, "from the bleak charred village of Domremy in its winter landscape to the peak of color at the King's coronation in Rheims cathedral and back again to the barrenness of Rouen prison.

Statuary was kept to a minimum. One important figure is the simple Virgin and Child in the forest to which Miss Bergman prays before she goes to the King with her plan to save France.

There has probably never been a motion picture subjected internationally to such microscopic scrutiny as "Joan." To the task of creating authentic France in 1428, Day brought 27 years of experience and the prestige of five Academy Awards.

Day lists the following as his three most impressive sets on "Joan of Arc":

1. A reproduction of a huge section of the famous castle of Philippe-Augustus, built in the 11th century at Rouen. In various parts of the impressive old Gothic structure the famous trial takes place. There is the Chapel Royal which is used as a public court and the smaller room to which the session adjourns privately. A long castle corridor with seven gothic arches was built ending at the giant torture chamber, and beyond that the prison section of the edifice.

2. Much of the famed Battle of Orleans takes place on either side of the mammoth battlement of Tourelles, a 50' stone fortress surrounded by a moat 6' deep and 15' wide. It was built to stand more than the ordinary stress and strain of a set because Ingrid Bergman and several companies of infantry scale the

wall and swarm to the other side where they engage in hand-to-hand combat with the enemy.

3. Reproduction of Rheims Cathedral where the coronation of King Charles VII takes place. This set is remarkable for its giant stone pillars, Gothic arches and ancient altar. Eleven hundred yards of expensive material were used to dress this set: 600 yards of velour and linenized cotton hanging from its stone walls, 400 yards of spun silk draping its altar and 100 yards of velour carpeting its cold rubble stone floors.

Day's impressive story goes back to the early twenties. As art director for Eric von Stroheim he did "Foolish Wives," "Greed," and "The Merry Widow." Then followed seven years at MGM in association with Cedric Gibbons. In 1930 he became Sam Goldwyn's art director and turned out "Street Scene," "Marco Polo,"

(Continued on Page 175)



Long and medium shots of the Day reproduction of the renowned castle at Rheims for the coronation of the French king.



# Kodak Sets Up New Laboratory To Study Films For Television

Eastman Kodak Company has set up a new laboratory to study films for television, Dr. Cyril J. Staud, director of Kodak Research Laboratories, announced recently.

Objective of the laboratory's research, Dr. Staud said, is to find films which will prove most useful in the television field.

"With new television equipment now in operation in the laboratory, we are studying the photographic properties of the image on a motion picture film and the relation of these properties to the image on the television screen," he said.

"Indications are that the films at present available, processed according to standard procedures, offer satisfactory results. In other words, our tests so far show that motion picture prints developed to give good quality on motion picture screens will also give satisfactory images when transmitted and shown on television screens," he said.

Dr. Staud said that at present a

great deal of television program time is devoted to projection film. He indicated three categories into which films for television fall and which are expected to be studied in the laboratory:

Films for producing advertising shows.

Films for photography of the images on the television screen.

Films for newsreel and related uses where high-speed processing is essential.

Most of the advertising shows are expected to adhere to conventional technique, using standard motion picture film.

Negative material that lends itself to rapid-processing at high temperatures will be important for the newsreels, Dr. Staud indicated.

He said that eventually the laboratory will extend its research to actual televising of live shows within the confines of the laboratory's experimental circuit, as well as considering additional films for television use,

depending on future requirements of the industry.

The laboratory will be equipped to do research on any television problems confronting the major studios, especially those pertaining to photography, he said.

T. Gentry Veal, in charge of the television research in the laboratory, said that while a television system has a restricted brightness range of not more than 50 to 1, and between closely adjacent picture elements the maximum contrast may fall as low as 10 to 1, it can still reproduce adequately the brightness range present in the subject matter being televised.

A reproduced picture may give a pleasing appearance and good contrast even though the absolute range of brightness is restricted, he said.

Commenting on films now in use, Veal said that a survey of audience reaction has indicated decided enthusiasm for televised films.

"Today, much better film productions are being made exclusively for the television market," he added, "and the major networks are quite receptive to them. These productions will be designed for satisfactory reproduction on the small home receiver screens and will thus take into consideration the restricted detail of the reproduced television pictures that we have today."

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# Appreciating The Motion Picture

By CHARLES LORING

**I**N recent years it has become a policy among women's clubs, art groups and similar public-spirited organizations to devote occasional meetings to the discussion and analysis of motion pictures. Responding to a similar trend are the many colleges and universities which have added courses in Motion Picture Appreciation to their curricula.

Both of these developments suggest that the motion picture has at last graduated (at least in one segment of the public mind) from the side-show status of the nickelodeon to a level where it merits serious consideration as an art form. This metamorphosis has taken several decades to come about, and it is quite possible that one or two more may elapse before the film will stand side by side with the novel and the stage play as a generally acknowledged literary form. The movies, mainly because of the overemphasized glamour which attends their production, have not yet really come into their own.

What, then, is the significance of this quest by clubs and colleges for a more comprehensive appreciation of the motion picture medium? Unfortunately the trend has not yet assumed a real significance because there exists no standardized basic criterion by which to judge a film. The women's clubs, for example, usually confine their discussions to the fitness of this film or that for family consumption, occasionally veering off to spirited comment on the clothes worn by a certain star in a particular film.

The art groups, on the other hand, generally go overboard in the other direction and assume a pseudo-intellectual point-of-view that is much too highbrow to be considered a fair basis of criticism for the general audience. Such groups customarily dwell on the more abstract elements of the medium, and their discussions frequently add up to a profusion of artistic double-talk that sounds impressive but actually signifies very little.

The colleges and universities have done somewhat better in striking a happy medium, although a great deal of improvement can yet be made. The principle shortcomings here is that there exist very few educators who are really qualified to teach (or shall we say explore) the subject of Motion Picture Appreciation. Most of the personnel now conducting such courses are experts in English Literature or sociology who have been drafted to lecture on the cinema. Usually they lack sufficient background in the history and

technique of the medium to clearly understand the subject themselves, much less convey it lucidly to the student mind. Also, they tend to approach this vital subject from much too academic a point-of-view, pursuing it just as they would an analysis of Chaucer or the psychology of group behavior.

## What Shall We Call It?

The modern film is many things to many people. To the great bulk of the mass audience it is a favorite form of entertainment, a recreational habit. Many psychologists go even farther in calling it an *escape* medium because it affords the spectator a means of vicarious withdrawal from a world of grim reality into a sphere of celluloid splendor that is often pure storybook, viewed through the rose-colored glasses of "gorgeous Technicolor."

Actually, while this viewpoint is valid in some respects, it is a bit far-fetched as a general statement. It is true that many moviegoers rusticated in drably realistic environments, go to the movies to identify themselves with the glamorous hero or heroine, thereby injecting a bit of second-hand excitement into their monotonous lives. But, by and large, the motion picture serves the American public as a convenient, inexpensive and generally amusing form of entertainment and relaxation. The fact that it frequently fails to be entertaining or relaxing does not dissuade the average moviegoer from "taking in a show" at least once or twice a week.

Looking at the motion picture from a much broader point-of-view, some analysts regard it as a *social force*. They point out that fads of dress, interior decoration, architecture and colloquial speech originated in the movies often become popular with the public to the extent of being assimilated into the customs and mores of everyday life. It cannot be denied that the films exert some influence upon the *superficial* behavior of the public, and certain producers have been carried away to the extent of regarding themselves as Shapers of Destiny.

However, it is far more accurate to say that the films *reflect* trends previously originated or encouraged by the public itself. There are very few producers who, having fixed a cautious eye upon the box office, dare to be too revolutionary in introducing new ideas to the audience. More often than not, the so-called *original* ideas portrayed on the screen have met with prior acceptance by at least a representa-

tive segment of the public. Producers analyze such response very carefully before saturating the public with the idea via the screen. Sometimes they bank too heavily on previous response, and by the time the idea has reached the screen, public interest in it has become exhausted. At any rate, it is fairly accurate to say that the motion picture *reflects* the currents of American life more often than it *induces* those currents.

The "March of Time" and "This is America" series, as well as the current number of photoplays filmed with a documentary approach exemplify another potentially vital function of the motion picture, that of informing or educating the public regarding a certain phase of contemporary life. When assuming this role, the film is indeed filling an important need—but there is always the danger that such pictures may become too partisan and thus degenerate into pure propaganda. Motion pictures of this type can be invaluable, but they must be supervised by men of taste and integrity.

We have, then, analyzed the main functions of the motion picture in America—and on that basis we can define the American photoplay as *an entertainment medium which reflects the trends and philosophy of modern life, and which is also capable of re-enacting history and informing the audience on important issues of the day*.

## The Film as Drama

The appreciation of a motion picture depends mainly upon the prime interest of the individual spectator. While one moviegoer may be principally interested in the film as an art form, another may be concerned solely with evaluating it as an evening's entertainment. Since the main function of the photoplay is to entertain, it is perhaps fitting that we concern ourselves first with the motion picture as *drama*.

In the early days of the movies, the camera was restricted to the telling of a simple story acted out in broad pantomime, with a minimum of printed titles to suggest dialogue. As the technique of the cinema developed and progressed, the medium grew more versatile until it finally became (as it is today) the most selective and the least limited of all dramatic media.

There are those who hoot when you refer to the motion picture as dramatic art.

(Continued on Page 168)



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# Society of Motion Picture Engineers Hold Convention on West Coast, May 17th to 21st

ONE of the most important and significant semi-annual conventions of the Society of Motion Picture Engineers—from the standpoint of disclosure of new equipment, new practices and procedures, and other phases of research and engineering for the motion picture industry—will be held at the Santa Monica Ambassador Hotel, May 17th to 21st inclusive. The Santa Monica location, within 12 miles of Hollywood and close to several of the major studios, was selected due to the unavailability of hotels in the Hollywood area for the accommodation of the large number of members and guests who will attend from all sections of the United States and the world.

From the list of papers and demonstrations already set on the program of 12 technical sessions during the convention; and the large number of reservations received from distant points; the convention looms as the greatest ever held by the S.M.P.E. on the west coast in two decades. It is expected that registrations will hit a new high mark in Society convention history, and the Magnolia Room of the Santa Monica Ambassador—which will be used for all technical sessions—has capacity of more than 1,000.

## Officers In Charge

National President Loren L. Ryder, head of Paramount studios sound department, has been working hard for many months in setting up the overall arrangements. William C. Kunzmann, Convention Vice President who has personally handled all of the 62 former S. M. P. E. gatherings, set up the preliminary arrangements in prior visits to the coast, and arrives in Hollywood May 1st to take personal charge of all business activities until conclusion of the convention.

S. P. Solow is chairman of the Pacific Coast Section and local arrangements. Program of papers has been prepared by G. A. Chambers as chairman, and Dr. N. L. Simmons, jr. as vice-chairman on the Pacific Coast. Other chairmen appointed for the convention include: Harold Desfor, publicity; G. F. Rackett, luncheon and banquet; Watson Jones, hotel reservations; G. C. Misener, membership and subscription; R. H. McCullough, 35 mm. projection program; W. J. Colleran, 16 mm. projection program; P. E. Brigandi, public address equipment; and Mrs. S. P. Solow, Ladies' Reception.

The convention gets under way on morning of May 17th with a brief business session, followed by get-together luncheon at which guest speaker will be W. W. Watts, vice president of RCA. Regular convention banquet, with entertainment and dancing, will be held on evening of May 19th.

## Complete Program of Papers

Schedule of papers and demonstrations for the convention, subject to final revision after this issue goes to press, follows:

### MONDAY, MAY 17TH

**11 a.m.**—Business session; introduction of Society officers; Report of the President; Report of the Convention Vice-President; Standards Committee Report, F. T. Bowditch, Research Laboratories, National Carbon Co., Cleveland; Report of Committee on High Speed Photography, by A. P. Neyhart, Douglas Aircraft Co., Cleveland.

**2 p.m.**—S. P. Solow, chairman; G. R. Crane, vice chairman.

"Tentative Standards for Noise and Distortion Measurements," by E. W. Kellogg, RCA Victor Division, Radio Corporation of America, Indianapolis.

"Variable-Area Recording with the Light Valve," by J. G. Frayne, Western Electric Company, Hollywood.

"A Light-Valve Variable-Area Modulator," by L. B. Browder, Western Electric Company, Hollywood.

"Volume Compressors for Sound Recording," by W. K. Grimwood, Research Laboratories, Eastman Kodak Company, Rochester.

"A Single-Element Unidirectional Microphone," by Harry F. Olson, and John Preston, Research Laboratories, Radio Corporation of America, Princeton, New Jersey.

"Film Standards, Film Dimensions, and Film Behavior," by A. C. Robertson, Eastman Kodak Co., Rochester.

"An Experiment in Stereophonic Sound," by L. D. Grignon, 20th Century-Fox Film Corp., Beverly Hills.

**8 p.m.**—W. V. Wolfe, chairman; L. Goldsmith, vice chairman.

"Flicker in Motion Pictures; Further Studies," by L. D. Grignon, 20th Century-Fox Film Corporation, Beverly Hills.

"Audio-Visual Materials — Prospects and Needs," by Donald C. Doane, Direc-

tor, Audio-Visual Laboratory, University of Southern California, Los Angeles.

"The Film Collection Program in the Academy of Motion Picture Arts and Sciences," by H. L. Walls, Academy of Motion Picture Arts and Sciences, Los Angeles.

"Problems of Locating Theater Sites," by E. G. Faludi, City Planning Consultant, Toronto, Ontario.

"Technical Aspects of 16-Mm Feature Motion Picture Production," by R. Adams, Telefilm, Inc., Hollywood.

"U. S. Navy Photography in the Antarctic," by Lt. C. C. Shirley, USN.

### TUESDAY, MAY 17TH

**10 a.m.**—C. R. Daily, chairman; O. B. Gunby, vice chairman.

"The Present State of the Art in Evaluating Loudspeaker Performance," by J. K. Hilliard, Altec Lansing Corporation, Los Angeles.

"The Technique of Reducing Sound Distortion by Compromise Adjustments and Anticipation of Noise Reduction," by R. A. Dupy, Metro-Goldwyn-Mayer Studios, Culver City, California.

"Progress Report on the Standardization of Home Phonograph Recording and Reproduction," J. K. Hilliard, Altec Lansing Corporation, Los Angeles.

"A 'Silent' Playback and Public-Address System," by B. H. Denney and Robert J. Carr, Paramount Pictures, Inc., Hollywood.

"Modern Film Re-Recording Equipment," by Wesley C. Miller, MGM Studios, and G. R. Crane, Western Electric Co.

"A Professional Wire Recorder For Studio Use," by Otto R. Nemeth, Chicago.

**2 p.m.**—J. G. Frayne, chairman; F. L. Eich, vice chairman.

"Magnetic-Sound Recording for the Motion Picture Technician," by D. O'Dea, RCA Victor Division, Radio Corporation of America, Hollywood.

"Film-Drive System for a Combination Photographic and Magnetic Sound Recorder," by J. L. Pettus, RCA Victor Division, Radio Corporation of America, Hollywood.

"Some Distinctive Properties of Magnetic Recording Media," by Robert Herr, Minnesota Mining and Manufacturing Co., St. Paul.



"Magnetic Recording as a Solution to Certain Sound Production Problems," by J. T. Mullin, W. A. Palmer and Company, San Francisco.

"A 35 mm. Magnetic Recording System," by E. Masterson, RCA.

"Determination of Optimum Value of High Frequency Bias in Magnetic Recording," by G. L. Dimmick and S. W. Johnson, RCA.

"Stereophonic Magnetic Recording," by Marvin Camras, Armour Research Foundation, Chicago.

"Magnetic Sound for 8-Mm Motion Pictures," by H. A. Leedy, Armour Research Foundation, Chicago.

**2 p.m.**—New Equipment Session, Rouge Room, with displays. H. W. Remerscheid, chairman; Leo Chase, vice chairman.

"An Improved Camera Crane," by Andre Crot, Motion Picture Research Council, Hollywood.

"An Improved Artificial Snow," by M. Martin, RKO Studios, Hollywood.

"Make-Believe Bullet Holes," by M. Martin, RKO Studios, Hollywood.

"A Magnetic Device for Cuing Film," by James A. Larsen, Academy Films, Hollywood.

"An Improved 35-Mm Synchronous Counter," by Robert A. Sater and J. W.

Kaylor, Cinecolor Corporation, Burbank.

"1000-Foot Bipack Magazine and Adapter," by W. R. Holm and J. W. Kaylor, Cinecolor Corporation, Burbank.

"A New Film Splicer," by E. J. Denison, United Artists Prods., Hollywood.

"A Time-Interval Marking Device for Motion Picture Cameras," by C. N. Edwards, U. S. Naval Photographic Center, Anacostia, D. C.

"A New Automatic Sound Slide Film System," by W. A. Palmer, San Francisco.

"A New Background Projector," by H. Miller and E. C. Manderfeld, Mitchell Camera Co., Burbank, Calif.

**8 p.m.**—Col. N. Levinson, chairman; Dr. B. F. Miller, vice chairman.

"Sensitometric Aspects of Television Monitor-Tube Photography," by F. G. Albin, RCA Victor Division, Radio Corporation of America, Hollywood.

"16-Mm Film as a Medium for Television Program Material," by J. A. Maurer, J. A. Maurer, Inc., Long Island City, New York.

"Programming Aspect of Television Production," by R. A. Monfort, Times-Mirror Company, Los Angeles.

"Films for Television," by Jerry Fairbanks, Jerry Fairbanks, Inc., Hollywood.

"Television Transmission Facilities to

Be Provided by the Telephone Companies," by E. H. Schreiber, Pacific Telephone and Telegraph Company, Los Angeles.

Demonstration of Direct Pickup Large-Screen Television by Warner Bros. Studios.

"Effects of the FCC Decision on Theatre Television," by Paul J. Larsen.

### WEDNESDAY, MAY 19TH

**10:30 a.m.**—Demonstration by Thorobred Photo Service, Inc., at Hollywood Park Race Track, by arrangement with Colonel Nathan Levinson, Warner Bros. Pictures, Inc.

This demonstration of the methods used in horserace photography is limited to registrants and wives. Cab service will be available from the Santa Monica Ambassador Hotel to Hollywood Park. A regular afternoon racing session begins at 1:00 p.m. Members are welcome to spend the afternoon at the track.

### THURSDAY, MAY 20TH

**2 p.m.**—E. I. Sponable, chairman; A. Gundelfinger, vice chairman; Joint meeting with Inter-Society Color Council.

"Characteristics of Light Sources," by Norman Macbeth, Consulting Engineer, New York.

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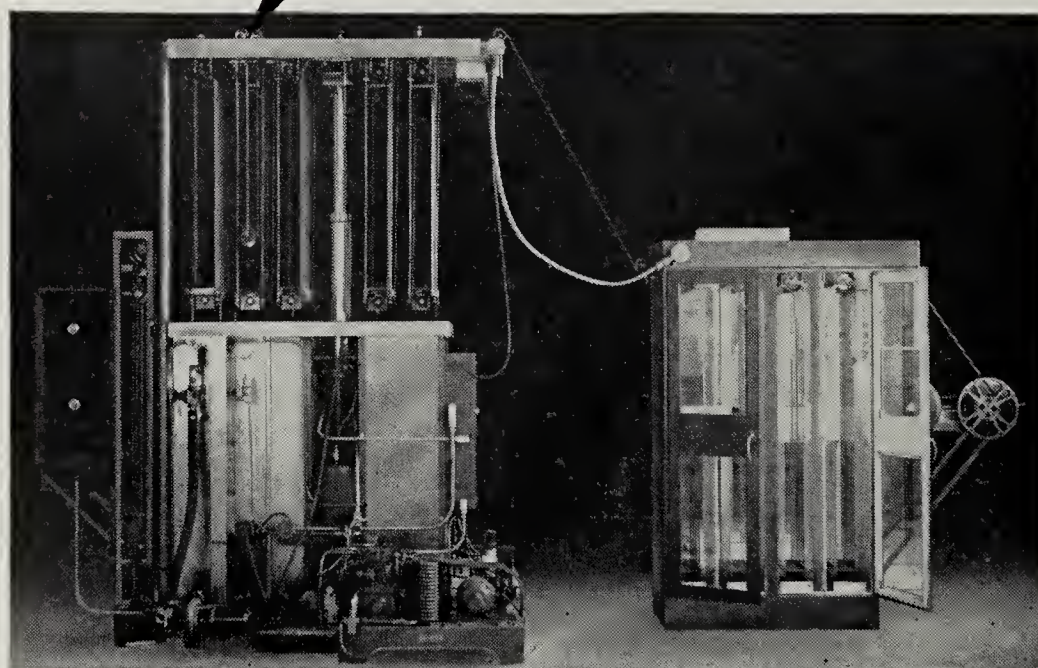


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"Color Phenomena," by I. A. Balinkin, University of Cincinnati.

"Basic Principles of Color Systems," by Carl E. Foss, Inter-Society Color Council.

"Some Systems in Color Preference," by J. P. Guilford, Beverly Hills.

**2 p.m.**—New Equipment Session, Rouge Room, with exhibits. Watson Jones, chairman; F. L. Hopper, vice chairman.

"An Improved 35-Mm to 16-Mm Optical Reduction Sound Printer," by J. L. Pettus, RCA Victor Division, Radio Corporation of America, Hollywood.

"16-Mm Film Phonograph," by C. E. Hittle, RCA Victor Division, Radio Corporation of America, Hollywood.

"RCA Mobile Recording Channel," by Watson Jones, RCA Victor Division, Radio Corp. of America, Hollywood.

"Tape and Disc Recording Equipment," by William Elliott, Cinema Engineering Co., Los Angeles.

"A Frequency-Modulated A. F. Oscillator For Calibrating Flutter-Measuring Equipment," by P. V. Smith and E. Stan-ko, RCA Service Co., Camden.

"Wide Track Optics For RCA Variable-Area Recorders," by L. T. Sachtleben, RCA.

"Soundproofing Generators," by Earl Miller, RKO Studios, Hollywood.

"Industrial Sapphire in Motion Picture Equipment," by Walter Bach and Chris Wagner, Los Angeles.

"A Graphic Equalizer," by Fred R. Wilson, Samuel Goldwyn Studios, Hollywood.

**8 p.m.**—Academy Award Theatre, joint meeting with Inter-Society Color Council. C. R. Keith, chairman.

Demonstration lecture: "Seeing Light and Color," by Ralph M. Evans, Eastman Kodak Co., Rochester.

#### FRIDAY, MAY 21ST

**2 p.m.**—Charles W. Handley, chairman; W. E. Gephart, vice chairman.

"An Integral Disk Recording and 8-Mm Motion Picture Reel for Synchronized Sound Motion Pictures," by P. Goldstone and R. Like, Phonovision Corporation, Hollywood.

"Make-up for Color Photography," by Hal King, Max Factor and Company, Hollywood.

"The Motion Picture Research Council—Its Functions and Activities," by W. F. Kelley, Motion Picture Research Council, Hollywood.

"Theoretical Backgrounds for Bipack," by Thomas Garvey, University of Southern California, Los Angeles.

"Principles and Practices of Three Color Subtractive Photography," by W. T. Hanson and F. Richey, Research Laboratories, Eastman Kodak Co., Rochester.

"Trend Control in Variable Area Processing," by F. Herrnfeld, Ansco.

**8 p.m.**—G. F. Rackett, chairman; E. H. Reichard, vice chairman.

"Masking in Color Duplication," by T. H. Miller, Eastman Kodak Company, Rochester.

"The Analysis of Developers and Bleach for Color Reversible Film," by A. H. Brunner, Jr., P. B. Means, Jr., and R. H. Zappert, Research Laboratory, Ansco Division, General Aniline and Film Corporation, Binghamton, New York.

"A Laboratory for Development Work on Color Motion Pictures," by H. C. Harsh and K. Schadlich, Ansco.

"Processing Control Procedures for Ansco Color Film," by James E. Bates and I. V. Runyan, Ansco.

"An Improved Safety Motion Picture Film Support," by C. R. Fordyce, Eastman Kodak Co., Rochester.

Because of the policy of the Society of Motion Picture Engineers in restricting publication of any papers originally presented at convention technical sessions until after they have been printed in the SMPE Journal, the AMERICAN CINEMATOGRAPHER will not be able to publish important papers in full for several months. However, abstracts of papers of importance to motion picture photography and related production practices, will appear in our June issue.



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## Appreciating Motion Pictures

(Continued from Page 163)

They consider it sacrilege to mention a movie in the same breath with a stage play or novel. They maintain that the screen requires no real acting from its players, that the whole affair is done on a "piece-work" basis, and that nothing "great" (whatever that means) will ever appear on the screen.

Actually, the screen has presented a good bit of drama that ranks with the best the stage has offered, and has done so with much more scope than the restrictions of the proscenium would allow. There have been some outstanding performances by screen actors, too—with the added feature of naturalness that cannot

be achieved on a stage where it is necessary to project to the last row of the gallery. True, the element of personal interplay between live actors and the audience is missing in the motion picture, but its loss is more than compensated by the greater degree of selectivity and the intimacy made possible, for instance, by the use of close-ups.

That films are shot on a "piece-work" basis is not a valid criticism since it is, after all, the final result that counts. Screen technique actually allows for a smoother, more accurate portrayal because it is possible to shoot the action again and again until it is perfect. That there are not more dramatically outstanding photoplays is due mainly to the fact that double bills and frequently varied theatre

programs require the American film industry to produce several hundred features a year—and there just isn't that much top-rate talent available. When one compares this prodigious output with the meager dozen or so successful plays which appear on Broadway each season, it is evident that the screen (while forced to concentrate on quantity rather than quality) has not done too badly. The fact that the mass audience is often more interested in the personalities of the players than in their talent as actors has also hindered the development of the screen as a true dramatic medium. The "star system" forces producers to cast popular personalities in roles which those players are often not professionally equipped to play.

Finally, the main criterion of worth for any type of drama is its ability to draw an empathic response from the audience. In this capacity a well-produced motion picture can be superbly effective. The camera is able to move in for close-ups that bring out all the subtleties of a characterization. The flicker of an eyelash becomes significant and can, with proper emphasis, draw the audience so closely into the screen narrative that the spectator almost *lives* the story with the performers. A good deal

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of this emphatic response would be almost impossible to achieve within the confines of a theatre stage.

### The Film as Art

The motion picture, when viewed as an *art*, often suffers because the majority of criticism comes from self-styled authorities who insist upon dealing in far-fetched abstractions. To these critics, a film cannot possibly be art unless it teems with subtle symbolism, obscure psychological undercurrents, and (most maligned of all) "social significance."

These same individuals refuse to admit that a film can be artistic in its very simplicity, and that *art* (on the screen or otherwise) is something uncomplicated enough to be understood by more than the Chosen Few who seem to regard it as their own private *milieu*. Actually, the cinema is the most democratic of all arts. Its appeal is not to a small highbrow segment of the population, but to the great heterogeneous mass audience: the old and the young, the rich and the poor, the simple and the intelligent. Just as it is not possible to "please all of the people all of the time," it is unlikely that every picture could appeal to every one in the huge American movie audience. Now and then the industry is fortunate enough to produce a film with an almost universal appeal—but even then there is always one voice raised in scornful criticism—and the voice invariably comes from the minor ranks of pseudo-intellectuals who purely on general principle make it a point to dislike anything which the majority of just plain normal people find enjoyable.

The answer to this dilemma, if there is one, will have to come from a revision of policy on the part of the nation's movie producers. Instead of pouring millions of dollars into a picture which they hope will please everybody, these executives may decide to make three or four smaller budget pictures for the same amount of money, each of which will do a top-notch job of pleasing a main segment of the audience. The trend, spurred on by the recent curtailment of the foreign market, seems to point in this direction—and a situation produced by necessity may yet result in a more functional, and therefore more *artistic*, American motion picture industry.

To clarify the term: "the art of the motion picture," let it be said that the cinema is not *one* art, but an amalgam of *many* arts. Writing, direction, acting, set design, costume design, special effects, make-up, and musical scoring are all individual arts—and each has its own identity and basis for criticism. The fact that these manifold arts can be smoothly blended into a single unified dramatic production is in itself an artistic phenomenon.

### The Film as a Technical Achievement

We have said that the motion picture

is a blending of many arts, but it is likewise a blending of many sciences, not a few of which are highly technical. Each of the arts mentioned above depends upon a complex technology, and it is the coupling of artistic imagination with mechanical "know-how" that makes the production of motion pictures at all possible.

Cinematography, the actual photographic process of recording action on film, is the art most closely dependent upon technical knowledge. It calls for a comprehensive background in the science of optics, the physics of light, the chemistry of emulsions and developers, and a myriad of other technical fields. Even the most artistic cameraman must be a practical mechanic if he is to make his imaginative dreams take form on celluloid. He must know the limitations of his equipment, the physical characteristics of various film stocks, as well as the mechanics of setting up different styles of lighting. He is a creative personality who must know, not only how to dream up a certain visual effect, but how to produce it, as well.

Similarly, the writer, the director, the set designer and the other department heads concerned with the production must all combine technical skill with creative artistry if they are to achieve a worthwhile result. The composer of musical scores for motion pictures must be an expert mathematician; the make-up artist has to know how much light will be absorbed by different cosmetics and how much will be reflected; the set designer must know how to assemble a setting so that it will not only look authentic but will also be easy to dismantle for a variety of camera angles. Along with every artistic inspiration must go a practical plan for producing that particular effect on the screen.

### The Broader Concept

After considering these various points of view, then, we find ourselves formulating broader standards for the criticism or *appreciation* of the motion picture. Where once we spoke of a particular film as being "a good picture," or another as being poor, we now hesitate to make such sweeping statements because we realize that no picture is all good or all bad.

It is entirely possible for a dramatically weak film to be superbly photographed and, while the excellent photography does not compensate for inept dramatic construction, it is still worthy of appreciation as motion picture photography. Let us not give up expressing an opinion of the general impression created by each film, but let us look deeper than the surface and analyze the film in terms of its worth as drama, art and technical achievement. The serious moviegoer will find that not only is it unfair to the technician who has done a fine job to dismiss his efforts coldly because of shortcomings in another department of production—but it

is unfair to himself as well. He will miss a great deal if he allows his critical judgment to be dulled by one or two negative elements that may mar an otherwise excellent job of screen production.

The intelligent film critic owes it to himself to evaluate a picture in terms of what it says that is socially significant—without expecting each film to become a filibuster of propaganda. In the final analysis, a more productive appreciation of the motion picture depends upon a two-fold circumstance: a greater emphasis by the producer on ideas and approach rather than budget—and a broader, more objective and more open-minded approach to film criticism by the moviegoer.

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# AMONG THE MOVIE CLUBS

## San Francisco Westwood

Because of conflict with the Easter holidays, March meeting of Westwood Movie Club of San Francisco was postponed to April 1st, and was held at St. Francis Community Hall. Film program of Member films included: "Snowbirds," by Al Grammer; "The Curse of Dr. X," by Justin-McDonald; "Fallen Leaf," by Barbara and Bill Helms; "Canadian Rockies," by Joe Pisscott; and "Westwood At Dinner," a reel of the club's annual dinner.

Entries for the club's "one roll, uncut, unspliced" annual contest will close at the June meeting, when membership will judge on the films submitted. Plans have been completed for music recording accompaniment for all future film programs as a result of the desirability of projecting in that manner through past experience.

Westwood has also completed arrangements for film interchange with the Southwest 8 mm Club of Los Angeles, and the Albany Motion Picture Society. Clubs interested in similar tieup with Westwood can contact secretary Ed Kentera, 981 E. Grant Place, San Mateo, California.

## Los Angeles Cinema

Program chairman Charles Peters has installed a new idea for meetings for the Los Angeles Cinema Club. Members of the Technical Committee will be identified by ribbons titled "Technical Advisor," and, in addition to giving short talks at the session, will be available during intermission to discuss member problems and answer questions.

Film program for the meeting of April 5th, held at the Ebell Club, comprised: "Rose Parade," photographed by Dr. William Zimmerman with a Cine Special and sound added with an Auricon; "Glacier Park Studies," color-sound by Guy Hazelton; and "God of the Atom," by Dr. Irwin Moon.

Mid-season contest for novice film makers and for 35 mm. slides closes on June 30th. In the slide division, entries are limited to 10 slides each.

## New York Metropolitan

Metropolitan Motion Picture Club of New York City held its regular monthly meeting on April 15th at Hotel Pennsylvania for presentation of film program comprising: "Picnic," by Irwin Sharp and Cy Landy; "Blessed Event," by Raymond J. Berger of Cheektowaga, N. Y.; "Pinocchio's Jack-O-Lantern," by Harlan M. Weber of Schenectady; "By Jeep Through Norway," by Per Rasmussen of Copenhagen; and "Escape," by Harry Atwood, of Ajo, Arizona.

## Milwaukee Amateur

Nearly 900 members and guests attended the fifth annual gala show of Amateur Movie Society of Milwaukee, held on evening of April 2 at Shorewood Auditorium. Special program of local and national prize-winning kodachrome films were exhibited on the program, including: "Blue Horizons," by Walter Chappelle; "The Magic Carpet," by Mr. and Mrs. William Rheingans; "Paper Doll," 1947 AMSM club production; "Squeaky's Kittens," by Walter Bergmann, of Mt. Vernon, N. Y. (winner in National Humane Society contest); "Doghouse Blues," by E. H. Sparks, Bristol, Conn.; and "Motion," by Henry E. Hird, Ridgewood, N. J. Robert Jansen was master of ceremonies for the show, the most successful in club history.

A film on trick photography featured the April 14th meeting, held at Red Arrow Club; while Mr. and Mrs. William Rheingans discussed the proper scoring of music for films at meeting of April 28th. Going back to March 24th date, we note that Milwaukee Amateur staged a party—inviting the Racine and Kenosha club—to view the club television program over WTMJ which included "The Magic Carpet," by the William Rheingans; and "Dairyland," by Richard Nelson of Kenosha.

## New York Eight

Annual gala night of the New York City Eight MM. Motion Picture Club will be held at the Hotel Pennsylvania, New York, on May 14th, with film program to include: "Scenario for Three," by George "Valentine"; "Farm Frolics," by Terry Manos; "We Dude It Again," by Archibald MacGregor; "Closeups in Kodachrome," by William Lucas of Peoria, Ill.; "A Time to Remember," by Victor Ancona; and "Magic Stairway," by Harlan M. Webber of Schenectady.

General Electric's "The Family Album," an instructional film on lighting, featured the April 19th meeting. Also shown was "With a Jeep in Norway," by Per Rasmussen and Neils Kristenson of Copenhagen.

## Philadelphia Cinema

Philadelphia Cinema Club held two meetings during April. On the 13th, film program included: "Ice Follies," by Robert Henderson; "Lancaster County Farm and Tobacco Culture," by William Chambers; and the film on title making supplied by Bardwell & McAlister Multi-Efex Co.

## San Francisco Cinema

Film program for the April 20th meeting of Cinema Club of San Francisco, held at Women's City Club, included: "Color in Sweden and Norway," a 16 mm kodachrome produced by Mrs. and Mrs. Flick while on tour of the Scandinavian countries; "Whirling Wheels," through courtesy of Pacific Gas and Electric Co.; and "Al Jolson Sings," a novel sound and film experiment by Phil Del Bianco which utilized a wire recorder and 8 mm camera. Series of kodachrome slides, "1947 Caccation," was presented by president Ben Nichols, showing highlights of his vacation tour of the west.

## Minneapolis Octo Cine

Minneapolis Octo Cine Guild has announced two member film contests—a spring event of 50 feet of uncut film, with entries closing on May 25th; and summer contest of entries completely edited and titled of 200 feet or less with closing date October 26th.

At the March 30th meeting, several member films were shown, and Willard Belding presented a talk on continuity. Clinton Hedsten and his committee gave informative pointers on correct lighting at meeting of April 27th.

## Utah Cine Arts

Theo Merrill presented a technical discussion on the subject of "Continuity for Vacation Pictures" at April 21st meeting of Utah Cine Arts Club of Salt Lake City, held at Newhouse Hotel. He also exhibited one of his own films especially prepared to demonstrate his points. A surprise film was again shown to get the members into their seats for meeting start—also William Maxwell's "Vacation, Chicago Enroute to New York."

## Alhambra La Casa

To get members into the mood of vacation filming, two excellent travel films were shown at the April 19th meeting of La Casa Movie Club of Alhambra, Calif., held at the YMCA. Dr. Andrew G. Orear presented "Down Mexico Way," and Ralph Taylor screened "A Rocky Mountain Holiday."

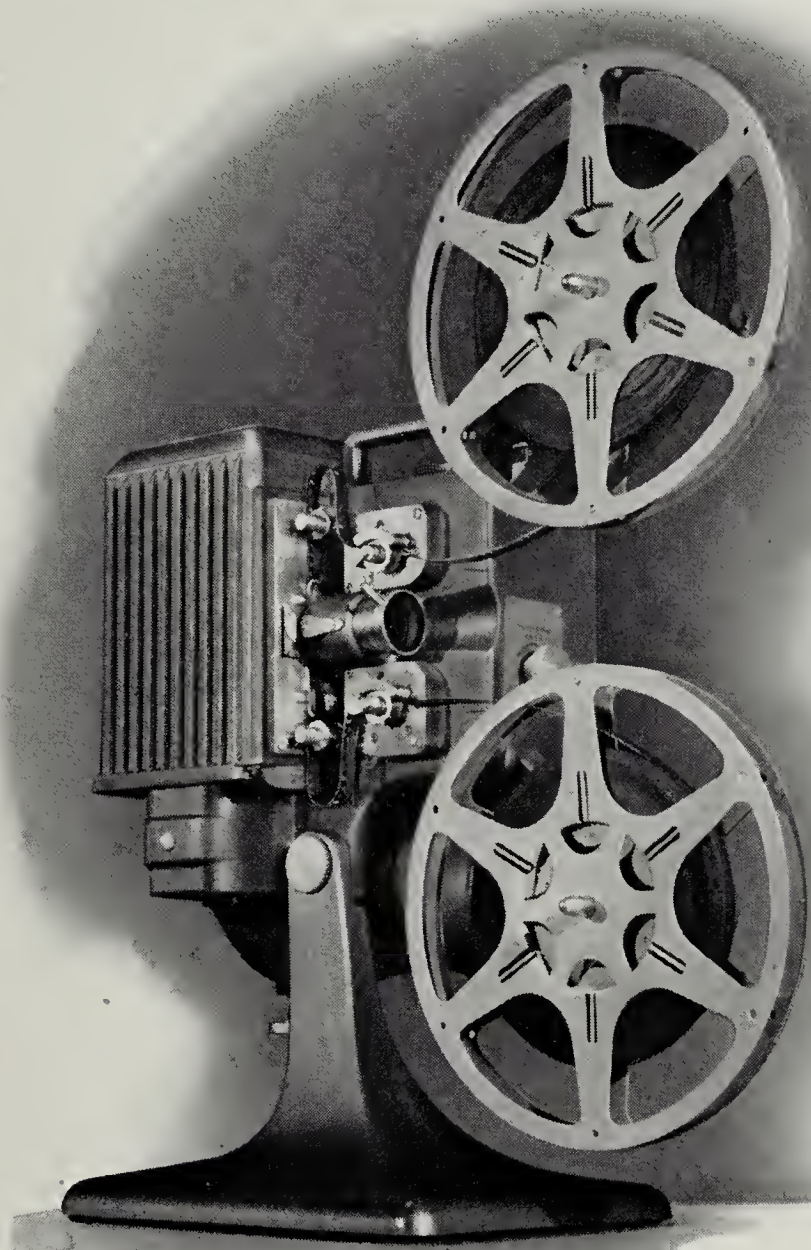
## Seattle Amateur

Showing of a film on how to properly make titles, and a discussion on shooting color film correctly and for best results, featured the April 13th meeting of Seattle Amateur Movie Club, held at Epiphany Hall.



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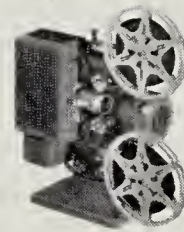
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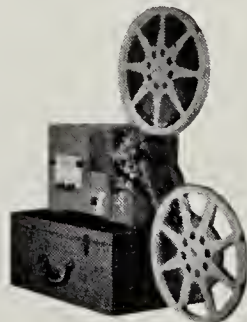
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# Television Broadcasts – A New Field For Amateur Movie Makers

**W**ITH the tremendous expansion of television broadcast activities during the past year, and the increasing volume of receiving sets sold—especially in the eastern seaboard and Pacific coast states—amateur movie makers will undoubtedly attempt to make films of various newsworthy telecasts directly from the television receiving screen.

There is no question that many movie makers will be frequent photographers of spot news events which will be televised, and thus assemble their own individual libraries of current events which will be televised more frequently as significant national and world events are carried over the rapidly expanding television networks.

Such reels can be edited into various classifications, such as football highlights; baseball thrills and world series games; prize fights; presidential speeches; political orators, etc.; for the film libraries of the movie makers.

## Testing Required

But such films, to secure the best possible results under the prevailing and future conditions existing between televi-

sion and motion picture photography, cannot be made with any degree of clarity without extensive prior photographic tests of the television screen from which the image is to be taken.

And the results at best—it might be pointed out—will not be anywhere comparable to the photographic quality secured in direct shooting of events or personalities.

The most suitable television image from which to take off a motion picture photographic record is currently recommended as one not exceeding the 12 by 18 inch size. Only tests will determine the proper distance between television screen and camera lens; the proper stops; and other factors of cinematography. It is suggested that the necessary tests, which might be lengthy, be only made of live broadcasts, and not from televised motion pictures. The latter are generally old films that do not have sufficient photographic qualities comparable with current product or emulsions, and seem to be inferior in quality generally to live broadcasts of television.

## Television vs. Cinematography

It will be impossible to secure as good a film record from the television screen as could be accomplished by filming the event in person. Bear in mind that the television camera scans at the rate of 30 frames per second, while the 8 or 16 mm. camera will pick up the televised image from the set at home at either 16 or 24 frames per second. There will be a flicker present—and no way to avoid the latter, even if attempts are made to photograph at 30 frames per second. Bear in mind that the television picture is scanned at about 525 lines per frame, which also has a definite bearing on inability to secure good photographic quality.

Despite these inherent handicaps existing between television and cinematography, it is possible to secure adequate photographic records of outstanding televised events off the television screen with either 8 or 16 mm. cameras. But the final results of the film will depend entirely on the ingenuity of the individual photographer in devising proper methods after exhaustive tests.

## Progress in Theatre Television

The foregoing information and suggestions applies to amateur takeoffs of television broadcasts for personal film libraries. Major film companies, notably Paramount, are conducting extensive research on the problem of utilizing television broadcasts of special and current events for projection onto theatre screens.

Extent of progress for theatre television was demonstrated last month by Paramount in New York City when a special tests television broadcast was rigged up and shown on an 18 by 24 foot screen at the Paramount theatre. Special apparatus provided for pickup of the video broadcast from the television tube in the theatre via a 35 mm. camera especially adjusted and synchronized for best results.

This film was quickly passed through a fast developing machine for processing and drying, and was running through the theatre projection machine about 66 seconds later. Newspaper reports stated the audience reception was satisfactory; and, although there was a fuzziness and wash-out of faces at times during the 18 minute demonstration, company officials were impressed that exceptional progress had been made toward the eventual showings of television broadcasts in theatres.

If a major film company, in association with television engineers, can adequately photograph a television image—even with large resources of both many and equipment—there is no question but what the amateur cinematographers can delve into the problem, and have plenty of fun devising proper methods of securing satisfactory photographic reproductions of televised programs.

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Ask your dealer for Ansco Hypan Film, today. He has it in both 8mm and 16mm sizes. It may well put your motion pictures in an entirely different class. **Ansco, Binghamton, New York.** A Division of General Aniline & Film Corporation.

**TIPS ON TITLES** —If you've got a box of thumb-tacks handy, try spelling out your movie title with the tacks — pushing them into a piece of soft wood

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The Fairchild Camera and Instrument Corporation has announced it now has a portable motor-driven daylight developing tank, accommodating 5¼" wide aerial roll film, available for immediate delivery.

Compact in size, light in weight, and easy to operate, this unit, the F-226, is ideal for use where laboratory facilities are limited. With the exception of unloading the camera and placing the film in the tank in the dark, all developing operations can be accomplished in normal daylight.

Solutions can be poured in and out of the tank without danger of exposing the film, and Fairchild engineers say that uniform developing is assured because the film is passed through the solution at a constant speed; further, the small liquid capacity of the tank makes regulation of solution temperature easier, and permits economical use of fresh chemicals with each roll.

## Hand Not Quicker Than Camera Eye

Is the hand quicker than the eye? Not the camera eye! During a visit in Rochester, New York, Harry Blackstone—the famous magician with "the fastest hands in the world"—cooperated with Kodak technicians in a test performed before the Eastman High-Speed camera. With the camera operating at 3,000 frames a second—187 times faster than an ordinary home-movie camera — Blackstone performed several simple tricks. The camera clearly revealed the split-second sleight-of-hand which made each of the illusions possible.

## Two New Safety Films

Latest safety films in the series produced by Aetna Life Affiliated Companies are: "Ladders, Scaffolds and Floor Openings," and "Back To Life." The latter deals with subject of applying artificial respiration. Films, in 16 mm. color with sound, are available through Aetna agents.

## Eastman Kodak Production Soars in 1947

Total production, sales, and earnings for 1947 were at "higher levels than ever before." This fact was revealed in annual report of the company to stockholders. Sales aggregating \$351,751,098 for the parent company and subsidiaries during 1947 were in contrast to \$274,703,448 for the previous year.

Highlights of the Kodak report include:

"Throughout the year there was a continued strong demand for most of the company's products. Marked increases occurred in sales of amateur photographic products, acetate yarn and staple fiber.

"Orders for many products exceeded the quantities that could be produced. This was true of most sensitized films and of such mechanical goods as still and motion picture cameras and projectors. In some cases it was necessary to continue a system of allocation to customers during all or year of the year."

From the standpoint of dollar sales, amateur photographic products account for 30%; commercial and photographic, 25%; and professional motion picture films, 9%.

## Photography Insures Better Plane Landings

When the giant air liners of tomorrow settle on the nation's runways with hardly a bounce, air line passengers may not be aware of the fact but photography will have played an important part in making their landings smooth.

According to reports from Los Angeles, the Lockheed Aircraft Corporation has completed a new test rig which makes it possible to simulate 100-mile-an-hour landings and record shock absorbing qualities of struts, tires, and runway. As test landing gears are checked with the new rig, high speed motion picture cameras photograph the gears during the moment of impact. This enables the engineers to study many aspects of the effect of impact and to locate weaknesses of designs or materials.

A total of more than 3,000 organic chemicals—ranging from Acenaphthene to Zinc Ammonium d-Lactate—are manufactured by the Eastman Kodak Company.

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SOUNDMIRROR magnetic tape recorder, ½ hr. cont. recording..... 229.50	
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ARRIFLEX hi-hat and tripod adapt.....	35.00
12v. plastic lightweight battery and case .....	45.00
12v. automatic, non-overload battery charger .....	29.50
EYEMO 71Q spider 3 lens turret, with 25mm f2 Astro, 2" Cooke f2.8, 100m f2.9 Cinemat lenses, pos. finders, 12v. motor, alignment gauge, B & H Eyemo tripod, cranks, case, excellent .....	1250.00

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## "Joan of Arc"

(Continued from Page 161)

the Eddie Cantor musicals, and many others. Two of his Oscars came during this period—"Dark Angel" and "Dodsworth."

In 1939 he went to Twentieth Century Fox as Supervising Art Director and, in association with staff designers, garnered three more Oscars for "How Green Was My Valley," "This Above All" and "My Gal Sal."

After two and a half years in a Marine Corps camouflage and photographic unit during World War II, Day returned to Fox and did "The Razor's Edge" and "The Ghost and Mrs. Muir."

Now free lancing, Day counts "Joan of Arc" as the biggest and most interesting challenge of his long career in art direction.

### Club Television Shows

Leave it to that progressive Amateur Movie Society of Milwaukee to take advantage of television as a display showcase for the film efforts of members—and at the same corral some additional movie enthusiasts who might be interested in joining the club and participate in its activities.

Maybe other clubs around the country have already made tieups with their local television stations (naturally if one has been established in the locality), but the Milwaukee group is the first to be brought to our attention. Premier showing of amateur movies was held over WTMJ-TV on evening of March 3rd. Dick Franzel and Irma Niedermeyer were interviewed, and Irma's prize winning film televised over the station.

With television broadcasts expanding every month to every section of the country, and the stations looking for unusual and interesting subjects, the Milwaukee club presents an idea for other groups to foster for both club promotion and the interests of amateur movie makers in general. Keep in mind that television stations will be seeking program material, and every one is equipped with special apparatus to broadcast 16 mm films.

### Quick Patching

In former days, when a film tore or a patch parted during running, the general procedure was to use a paper clip to prevent delay in screening. But many projectionists now keep a small roll of Scotch cellulose taps handy for possible break. When latter occurs, it is only necessary to impress a small piece of the tape on the celluloid—or non-emulsion side of the film—and continuing running. Elimination of the clips prevents possible scratching of emulsion two or more frames above where the eventual splice has to be made later.

## Farm Seasons Films Produced By Encyclopaedia Britannica

Encyclopaedia Britannica Films has produced series of three color films on farm seasons; spring, summer and fall; and—although specifically designed for school children—might also be interesting to amateur movie makers and clubs as guides and ideas for personal movies of both the seasons and farm activities. The films are available on rental from EB.

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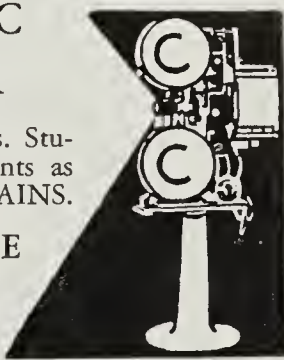
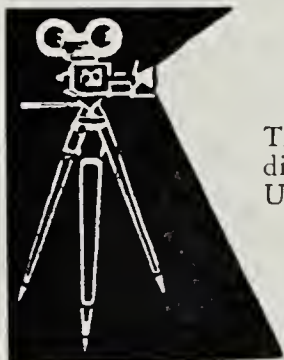
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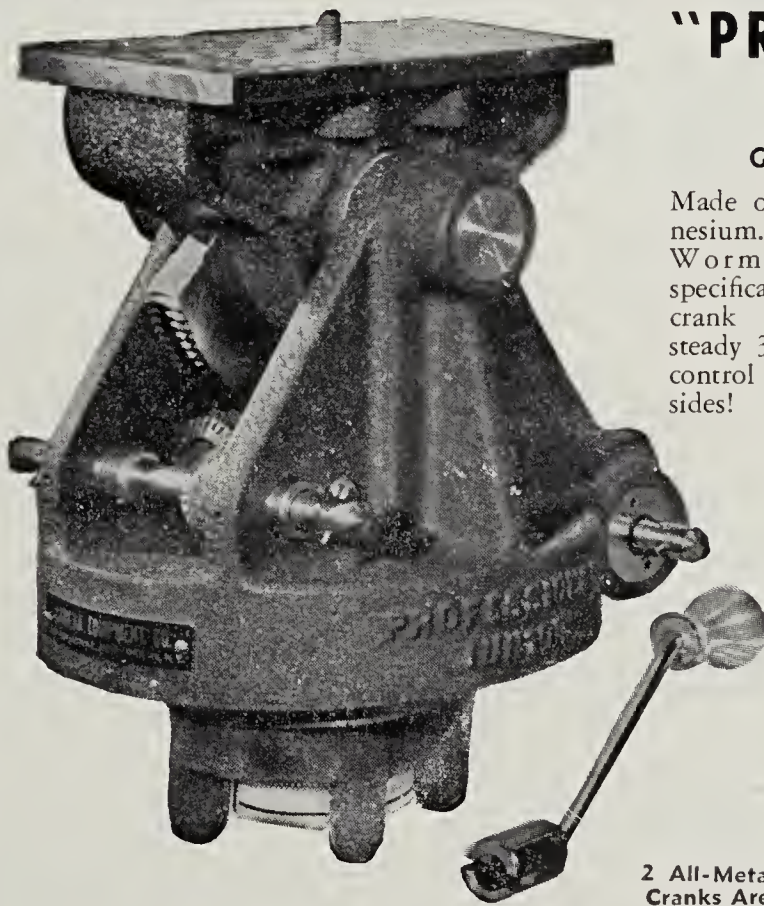


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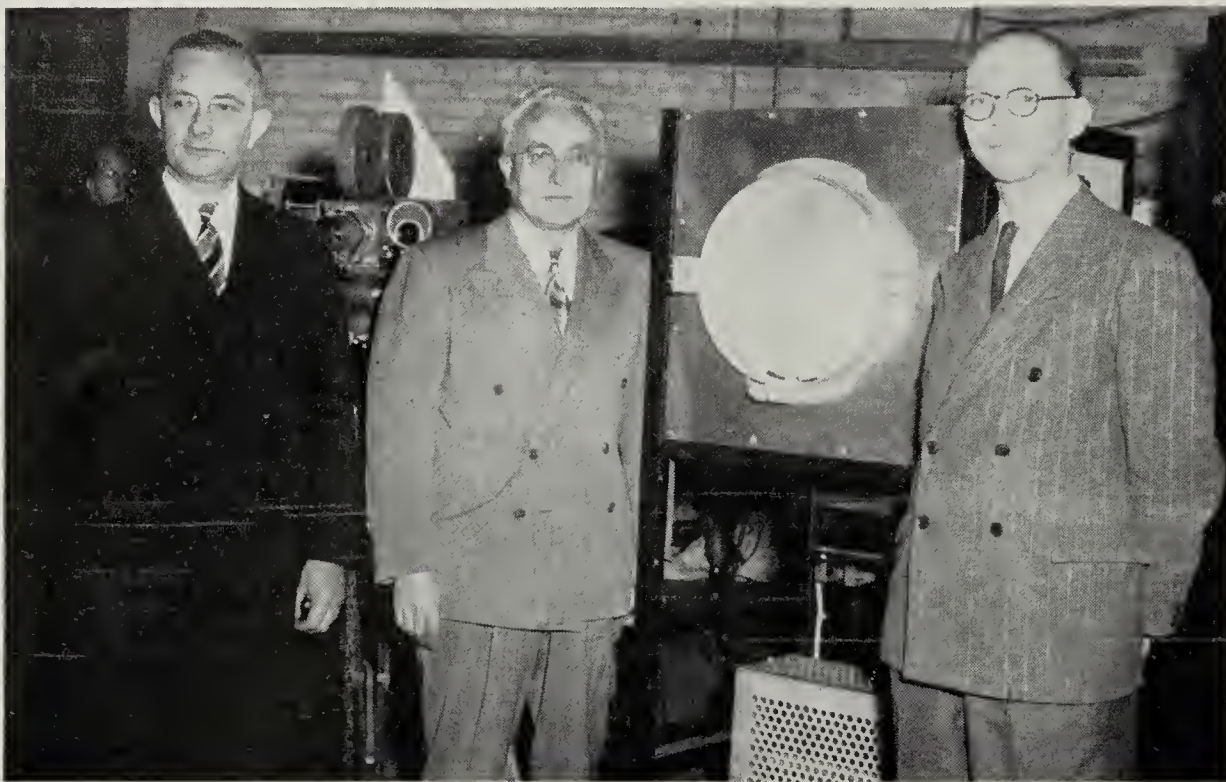


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## New Executives for Mole-Richardson of England



C. G. Heys Hallett (left) who joins Mole Richardson of England as Managing Director, and Dr. H. K. Bourne (right) who assumes post of Director of Research. They are shown with Peter Mole in Hollywood laboratory of Mole Richardson Co. while on visit last month.

Future British activities of the Mole Richardson organization—designers and manufacturers of professional studio lighting equipment since 1927—will be guided by C. G. Heys Hallett as managing director of Mole Richardson of England; with H. K. Bourne functioning as director of research for the company.

Hallett succeeds Robert J. Linderman, who retired after establishing the British organization in 1936 and successfully operating it during the ensuing years. Hallett was recently in charge of research and development for the lighting carbon division of Morgan Crucible Co. of England; while Bourne was formerly with British Thompson Houston Co. in charge of research and development of the new light source known as the mercury cadmium lamp, which was recently demonstrated in Hollywood by the General Electric Company, and which holds promise as an additional tool in the art of cinematic lighting.

Hallett and Bourne were in Hollywood last month conferring with Peter Mole, chief engineer M. A. Hankins, and other officials and engineers of the company, on future developments in lighting apparatus and plans for extending specialized services to the motion picture industries of both countries.

With the current expansion of film production activities in Italy, Mole Richardson is organizing a separate company in that country to be designated as Mole Richardson Italia. It will be set up to furnish a complete technical service on production lighting for the Italian, American and British producers that are contemplating production activities in Italy.

## 'How to Make Good Movies' On the Way Back!

Kodak's breezy, informative, and helpful book on amateur movie making—How to Make Good Movies—will again be available.

Generously illustrated with over 500 pictures, many of which are from the reels of amateur movie makers, How to Make Good Movies covers graphically the whole field of personal movies. From selecting the film and loading the camera to the projection of the finished movies, the book tackles and subdues every pertinent movie problem and does it in a fast-moving, readable manner that doesn't for one phrase lose sight of the fact that movies are really fun—and that's why most people make them.

Over 200,000 fans cut their movie teeth on earlier sell-out editions of How to Make Good Movies and are continuing to find it a convenient and easy-to-use handbook of good movie technique. The new edition has been revised to bring the book completely up to date from a technical standpoint and to make certain that all the latest information on amateur movie making is available to the reader.

## Kreuzer Promoted by RCA

Barton Kreuzer has been named manager of the newly created Theatre and Recording Equipment Section of RCA, according to company announcement. His division will comprise both theatre sound and projection equipment, and film recording for major and industrial producers.



## Film Preservation Treatment Offer Direct by Peerless

Peerless Film Processing Corporation announces that Vaporate Company is no longer its agent.

In previous years Vaporate Company acted for Peerless as a sales agency, representing Peerless in the amateur field and some categories of the non-theatrical field. Under the new arrangement, Peerless will continue to offer, in its precessing plant at 130 West 46th Street, New York, the same vacuum-vaporating treatment of film which they have offered in the past, but no longer through Vaporate Company. Instead of indirectly dealing with customers through Vaporate, Peerless now offers direct, under the Peerless name, the treatment which is widely known in the theatrical film field. The Peerless treatment, which extends useful film life, is available also at numerous commercial laboratories throughout the country where Peerless equipment has been installed. Treatment before projection of films has proved highly effective in reducing the possibility of damage during the first few runs and postpones the appearance of scratches and "rain" during long runs.

Direct dealing with all customers in the amateur and non-theatrical fields will also now enable Peerless to reduce the charges formerly made to such customers for film treatment and cleaning.

For additional information and new price lists write direct to Peerless Film Processing Corporation, 165 West 64th Street, New York 19, N. Y.

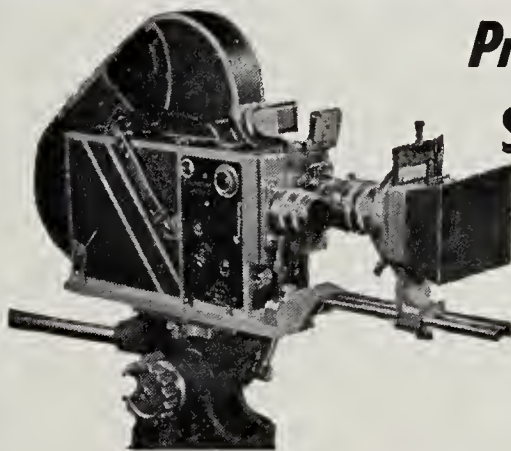
## Research Costs Cited By Kodak Scientist

The important cost of industrial research is not the cost of the research itself, but the cost of developing research discoveries into marketable material.

This fact was disclosed recently by Dr. C. E. Kenneth Mees, vice president in charge of Eastman Kodak research, who stated that, of the total cost of introducing a new product "on the average only 10% is the cost of the laboratory work. Another 25% will be the cost of the development to the production stage, and 65% the cost of preparation for production.

"For this reason it is most important that the choice of the projects to be developed to production should be correct, and it is not at all easy to select from the research work the products that will succeed on the market."

Dr. Mees further pointed out that often products with small sales need active and intensified research to lower cost, improve quality and thus increase the sales volume to a greater market.

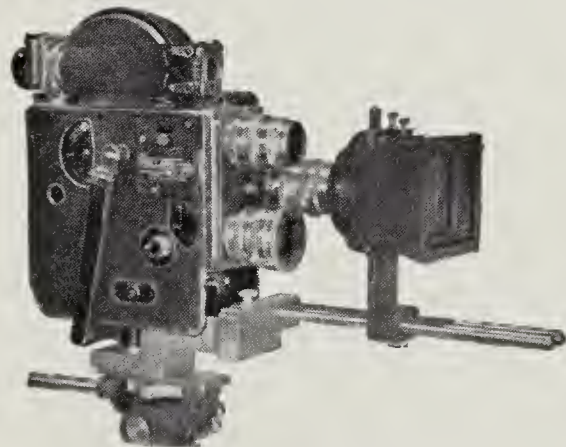


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The Sunshade-Filter Holder is supported by a double arm bracket. This attaches to a plate which you can fasten on to the base of your camera where it can remain at all times if you desire. The Sunshade-Filter Holder is demountable into 3 small units which, when not being used, fit into your camera carrying case.

Compact, simple to assemble or dismount, the entire Sunshade-Filter Holder and 2 filter holders which are supplied are precision-made of non-corroding metals. Every serious cameraman appreciates the advantages that accrue when a fine Sunshade-Filter Holder like this is used.



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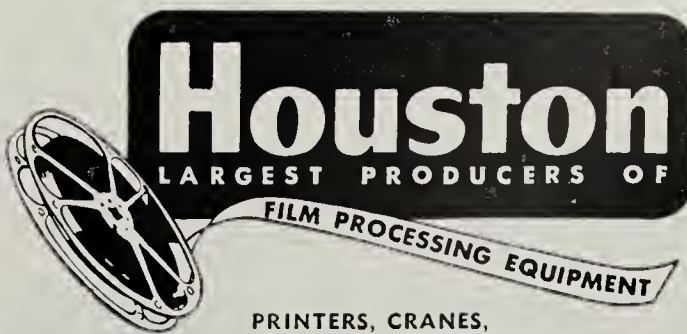
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## "Naked City"

(Continued from Page 153)

narrative that fits neatly into its vast setting, but never becomes lost in it.

The picture is full of clever little directorial touches that are solidly in key with the atmosphere of the locale. The camera pauses to watch kids splashing about in noisy ecstasy under a street hydrant; it eavesdrops as a couple of stenographers press their noses against the window of an exclusive dress shop and wonder aloud (in wistful Brooklyn accents) as to how they would look in the particular creation on display. The little people who make up a great city are not shunted aside as so much atmosphere—they are given a voice in the telling of the story, and what they say is important.

Of the three month shooting schedule allotted to the script, two and a half months were spent in New York where the greatest bulk of the action was filmed. As a result, all of the settings (including interiors) are absolutely authentic—a fact that is bound to delight New Yorkers at home and abroad. Unusual locales included the Williamsburg Bridge, the Bellevue Morgue, and the scaffolding of a building under construction twenty three floors above the street. The result is exactly what Mark Hellinger intended it to be: a film that shows New York as New Yorkers know it.

During the hour and a half running time of the film, the audience sees more of New York than it would see on a week's sightseeing tour of the city. It is estimated that twenty billion dollars worth of "sets," including Manhattan's impressive skyline, make their appearance as backgrounds to the action. A record crowd of 200,000 spectators watched the street scenes being filmed.

Of the twenty-four featured roles in "The Naked City," only four are portrayed by Hollywood actors. Twenty prominent parts were filled by New York radio and stage actors, most of whom were making their first screen appearances. The un-studied acting of these players is uniformly excellent, and the fact that their faces are not familiar adds greatly to the realism of the picture.

One of the more bothersome problems which director Dassin had to contend with was the crowds that gathered whenever the camera crew set up shop. Ropes were used to hold back the spectators, but when the mobs became unruly, a juggler was installed some distance away as a "decoy" to attract their attention. Further adding to the discomfort of the cast and crew was the fact that filming was done in June, July, August and September, during some of the hottest weather in New York's history.

The climactic sequence of the picture is a chase extending for a mile and a half

between a tenement apartment on the East Side to the Delancy Street entrance of the Williamsburg Bridge. This is one of the longest and most difficult chase sequences ever attempted, and required three weeks of filming. It takes the audience through alleys, over fences, across a lot full of tombstones, and finally reaches its climax when the fugitive is cornered high up in one of the towers of the bridge. In order to line up this sequence along a quarter mile span of bridge, director Dassin used roller skates.

### From the Camera Angle

William Daniels, A.S.C., whose outstanding work as Director of Photography on "The Naked City" is winning unanimous acclaim within the film industry itself, is a veteran of 30 years in the studios. Twenty-three of these were spent at M-G-M where he shot 92 features and became known as a top-notch "glamour" cinematographer. His realistic handling of the photography in "The Naked City" is a complete about-face from the softly-lighted, glossily diffused type of approach he used to employ as Garbo's special cameraman.

His work in the Hellinger film is a happy combination of dramatic composition and realistic lighting—coupled with the fact that he worked very closely with the producer and director in the pre-planning stages as well as during actual production. He has nothing but respect for director Dassin because of the fine co-operation he received and the free rein he was given in the selection of locales, camera angles and the establishment of mood through lighting. The unusual rapport which existed between these two technicians is evidenced by the smooth manner in which the photography complements the journalistic style of the action.

Director and cinematographer went to New York two months before shooting began in order to select locales that not only fit the story, but were also interesting from the photographic standpoint. Daniels was given final authority in the choosing of these backgrounds. Speaking of his overall approach to the film, he says: "We were after—well, let's call it *realism*. I dislike the term 'documentary' because the word has come to mean badly shot 16mm. footage."

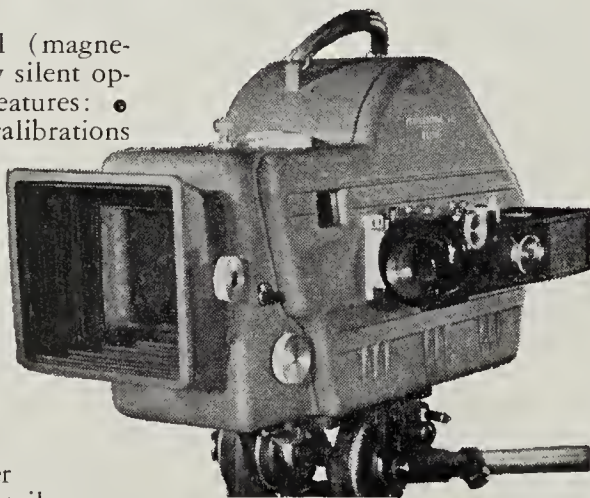
In order to accentuate realism in his visual approach, Daniels photographed the actors without make-up. His lighting style was so simple as to be almost radical from the Hollywood production point-of-

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view. He had constructed at the studio portable metal frames into which could be screwed four ordinary RAP2 photoflood bulbs. These easily transported units not only added to the realistic style of the photography, but made it possible to shoot sequences in rooms that would not have accommodated any other type of lighting. The scenes in the tenement house, for example, were shot in a five by nine foot room. In many cases, ordinary building current was sufficient to run the lights, but two army surplus generators were taken along on location where more current was needed than could be furnished by local power facilities.

As has been pointed out, one of the major problems was to conceal the camera so that crowds of curious onlookers would not clutter up the composition. This was accomplished by means of a panel truck whose sides were actually two-way transparent mirrors. The cameraman shot through the mirrors without the subject even suspecting that he was being photographed. Because of the density of the mirrors, *two full stops of increased exposure were required.*

The dusk and night shots in "The Naked City" are especially well done and reflect a good deal of expert planning. Usually there was a period of only about ten minutes during dusk when such scenes could be photographed. The cameraman and not the director decided when the sky had developed just enough glow so that the buildings would stand out against it, and it was the cameraman who gave the signal for "Action!" when such scenes were being filmed. The sequence showing the mother and father of the murdered girl departing from the city was rehearsed all day long and shot with three cameras during five minutes of twilight when the sun starts to drop behind Manhattan's skyline. On the screen, this sequence has a luminous quality that is very striking.

Nearly a quarter of a million feet of film was exposed during filming of the New York sequences, due to the unpredictable conditions under which shooting took place. Many famous buildings of the city were photographed for the last time, having since been demolished to make room for the United Nations building. The skyscraper shown to be under construction in one sequence is the new Universal-International building at 57th St. and Park Avenue. These scenes were shot atop a scaffold twenty-three stories above the street, and the director, cameraman and stars had to ride the material hoist in order to get an ascending shot called for in the script.

Photographically and directorially "The Naked City" rates with the best films of the year. But it is more than an interesting evening at the theatre. It is a tribute in celluloid to Mark Hellinger, a swell guy.

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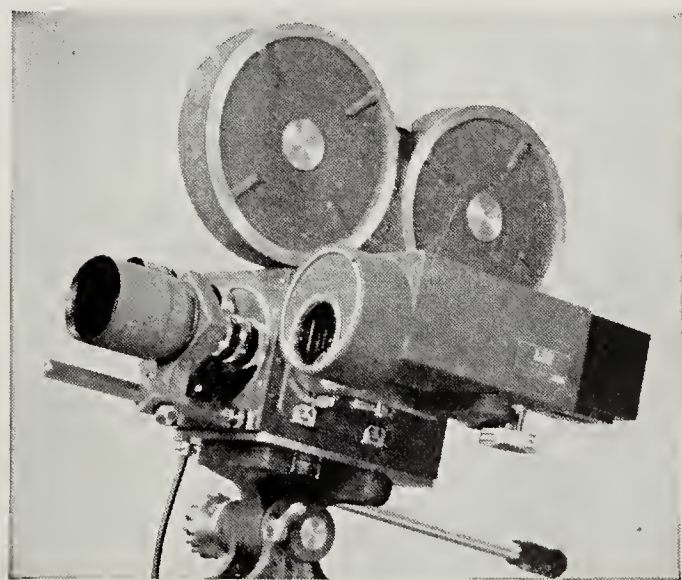
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# Current Assignments of A.S.C. Members

**M**EMBERS of the American Society of Cinematographers were engaged as Directors of Photography in the Hollywood studios as follows:

## Allied Artists

- Philip Tannura, "The Babe Ruth Story," with William Bendix, Claire Trevor, Charles Bickford, Sam Levene, Fred Lightner, William Frawley.

## Columbia

- Charles Lawton, jr., "The Wrangler," (Cinecolor) with Sonny Tufts, Barbara Britton, Gabby Hayes.

## Eagle-Lion

- John Alton, "Canon City," with Scott Brady, Charles Russell, Stanley Clements, Robert Bice, Mary Meade, Robert Kellard, De Forrest Kelly.

## Independent

- George Barnes, "No Minor Vices," (Enterprise Prods.) with Dana Andrews, Lilli Palmer, Norman Lloyd.
- Jack Greenhalgh, "Miraculous Journey," (Cinecolor) (Sig Neufeld Prod.) with Rory Calhoun, Virginia Grey, Audrey Long, George Cleveland, Thurston Hall.
- Benjamin Kline, "Big Dan," (Sol Wurtzel Prod.) with Charles Russell, Virginia Christine, Gary Gray, John Ridgely, James Burke, Konstantin Shayne.
- Ernest Laszlo, "All's Well," (Benedict Bogeaus Prod.) with Dorothy Lamour, Charles Laughton, George Montgomery, Charles Winninger, Sara Allgood.

## Metro-Goldwyn-Mayer

- Joseph Ruttenberg, "Julia Misbehaves," with Greer Garson, Walter Pidgeon, Peter Lawford, Elizabeth Taylor, Cesar Romero, Mary Boland, Dame Mae Whitty, Reginald Owen, Nigel Bruce.
- Robert Planck, "The Three Musketeers," (Technicolor) with Lana Turner, Gene Kelly, Van Heflin, June Allyson, Keenan Wynn, Angela Lansbury, Vincent Price, Gig Young, Robert Coote, John Sutton.
- Hal Rosson, "Command Decision," with Clark Gable, Walter Pidgeon, Van Johnson, Brian Donlevy, Charles Bickford,

John Hodiak, Edward Arnold, Clinton Sundberg, Marshall Thompson, Cameron Mitchell.

- Charles Rosher, "Words and Music," (Technicolor) with Judy Garland, Mickey Rooney, June Allyson, Vera-Ellen, Cyd Charisse, Marshall Thompson, Tom Drake, Perry Como, Ann Sothorn, Janet Leigh, Gene Kelly, Ann Miller, Lena Horne, Mel Torme, Dee Turnell.

## Monogram

- Jack MacKenzie, "Michael O'Halloran," (Windsor Prods.) with Allene Roberts, Scotty Beckett, Charles Arnt, Tommy Cook.
- Marcel LePicard, "Smuggler's Cove," with Leo Gorcey, Huntz Hall, Gabriel Dell, Amelita Ward, Jacqueline Dalya, Martin Kosleck, Paul Harvey.
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- William Sickner, "A Palooka Named Joe," with Joe Kirkwood, Elyse Knox, Stanley Clements, William Frawley.
- Harry Neumann, "Triggerman," with Johnny Mack Brown, Raymond Hatton, Virginia Carroll.

## Paramount

- Lionel Lindon, "Isn't It Romantic," with Veronica Lake, Mary Hatcher, Mona Freeman, Billy De Wolfe, Roland Culver, Patric Knowles, Pearl Bailey, Richard Webb.
- Charles Lang jr., "The Talock Millions," with Wanda Hendrix, John Lund, Barry Fitzgerald, Monte Woolley, Ilka Chase, Robert Stack, Dorothy Stickney, Elizabeth Patterson, Dan Tobin.
- John Seitz, "The Great Gatsby," with Alan Ladd, Betty Field, Macdonald Carey, Ruth Hussey, Barry Sullivan, Howard Da Silva, Shelley Winters, Henry Hull.
- Daniel Fapp, "Sorrowful Jones," with Bob Hope, Lucille Ball, Mary Jayne Saunders.
- Milton Krasner, "The Accused," (Hal Wallis Prod.) with Loretta Young, Robert Cummings, Wendell Corey, Douglas Dick.

## RKO

- Nick Musuraca, "Blood on the Moon," with Robert Mitchum, Barbara Bel Geddes, Robert Preston, Walter Brennan, Frank Faylen, George Cooper, Richard Powers.
- Harry Wild, "Weep No More," with Joseph Cotten, Valli, Spring Byington, Jack Paar.

## Twentieth Century-Fox

- Victor Milner, "Unfaithfully Yours," with Linda Darnell, Rex Harrison, Rudy Vallee, Barbara Lawrence, Kurt Krueger.
- Norbert Brodine, "Road House," with

Ida Lupino, Cornel Wilde, Celeste Holm, Richard Widmark.

- Harry Jackson, "Burlesque," (Technicolor) with Betty Grable, Dan Dailey, Jack Oakie, June Havoc, Richard Arlen, James Gleason, Benita Wade.
- Charles Clarke, "That Wonderful Urge," with Tyrone Power, Gene Tierney, Reginald Gardiner, Lucille Watson.

## Universal-International

- William Daniels, "Washington Girl," with Deanna Durbin, Edmond O'Brien, Don Taylor, Jeffrey Lynn, Ray Collins, Hugo Haas, Harry Davenport, Katherine Alexander, Griff Barnett, Nicholas Joy, Harry Cheshire, Charles Meredith, Raymond Greenleaf, Leon Belasco, Louise Beavers, James Todd.
- Russell Metty, "Kiss the Blood Off My Hands," (Hecht-Norma Prod.) with Joan Fontaine, Burt Lancaster, Robert Newton, Felippa Rock, Colin Keith-Johnston, Peter Hobbes, Harold Goodwin, Valerie Cardew.
- Maury Gertsman, "Rogue's Regiment," with Dick Powell, Marta Toren, Vincent Price, Stephen McNally, Carol Thurston, Kenny Washington, Philip Ahn, Richard Loo, Edgar Barrier.
- Irving Glassberg, "Larceny," with John Payne, Joan Caulfield, Dan Duryea, Shelley Winters, Richard Rober.

## United Artists

- Edward Cronjager, "An Innocent Affair," (Nasser Prod.) with Madeleine Carroll, Fred MacMurray, Charles "Buddy" Rogers, Rita Johnson, Louise Allbritton, Michael Romanoff.

## Warners

- Woody Bredell, "Don Juan," (Technicolor) with Errol Flynn, Viveca Lindfors, Robert Douglas, Romney Brent, Alan Hale, Jerry Austin, Robert Warwick, Joanne Page, Helen Westcott, Mary Stuart, Tim Huntley, Barbara Bates, Fortunio Bonanova.
- Sid Hickox and Wilfrid Cline, "One Sunday Afternoon," (Technicolor) with Dennis Morgan, Janis Paige, Dorothy Malone, Don De Fore, Ben Blue, Dick Walsh, Dick Taylor, Alan Hale, jr.
- Carl Guthrie, "This Side of the Law," with Dane Clark, Geraldine Brooks, S. Z. Sakall, Wallace Ford.
- Robert Burks, "A Kiss in the Dark," with Jane Wyman, David Niven, Wayne Morris, Victor Moore, Broderick Crawford.
- Ernest Haller, "My Dream Is Yours," (Technicolor) (Michael Curtiz Prod.) with Jack Carson, Doris Day, Eve Arden, Adolphe Menjou, S. Z. Sakall, Edgar Kennedy.
- Peverell Marley, "Silver Lining," (Technicolor) with June Haver, Ray Bolger, Gordon MacRae, Charlie Ruggles, Rosemary De Camp, Lee Wilde, Lyn Wilde.

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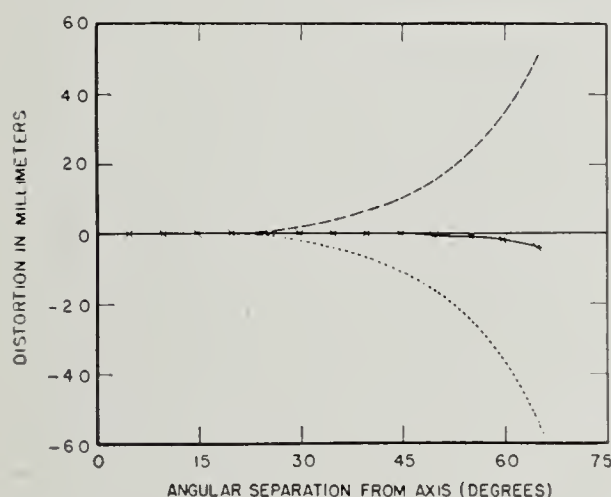


## Wide Angle Lens

(Continued from Page 155)

jects common to the two photographs can be measured stereoscopically. This process is one of the large costs in aerial mapping. It is evident that if a camera with a larger field of views is used, fewer photographs will be required to cover a given area, and the cost of orientation will be correspondingly reduced. Consequently, in airplane mapping there is a great economic urge toward the use of wide-angle lenses. Lenses with large amounts of distortion can be economically used provided they afford a markedly larger field of view.

Following the war American intelligence groups in Germany brought back



Graph prepared by National Bureau of Standards, illustrating extent of compensation effected by rectifier for negative distortion in a Pleon lens photograph. Dotted curve shows linear distortion of camera lens, multiplied by 0.82 to reduce values to scale of rectified print. Full line curve, obtained by adding corresponding ordinates of first two curves, shows residual distortion in final print.

German wide-angle equipment which made use of large amounts of distortion to obtain a wider field of view. The German lenses utilize a principle embodied in a patent (Patent Number 2,037,017) by Dr. Gardner in 1936 and one which has not yet been applied by American industry. Although the focal length of the German lens, known as the Pleon (Figures 2 and 3), is only  $2\frac{3}{4}$  inches, the large outer lenses are approximately a foot in diameter with a field of view of  $130^\circ$ . The law

governing the distortion of this lens is given by the equation— $r' = fB$ —the distortion being somewhat less than that of equation 1. Distortion in the negative is corrected for projection or printing by a specially designed optical device, in which light for the rectifying system is supplied by a high-pressure mercury arc (Figures 4 and 5). Because the optical system is not corrected for color, a filter is employed to admit approximately monochromatic light. In effect, the rectifier introduces positive distortion; that is, it magnifies the marginal parts of the picture more than the center, thus compensating the negative distortion in the original photograph (Figure 6). Actually a small amount of distortion remains in the print after rectification, and this distortion is in fact, too large for American photogrammetric practice.

It has been mentioned that negative distortion tends to increase the uniformity of the effective exposure as compared with an exposure made with a distortion-free lens. It will be readily understood that large positive distortion, as in the optical system of the rectifier, exaggerates the unevenness of illumination. Greater magnification at the edge as compared with the center of the picture further decreases the exposure of the marginal points, which ordinarily would have received relatively less exposure. In laboratory copying apparatus, this is not a particularly serious characteristic, because the relative illumination of the different parts of the picture is under control and can be adjusted to give uniform exposure on the final photograph. In the German rectifier a filter of graduated density, lighter from the center outward, is used to balance the illumination.

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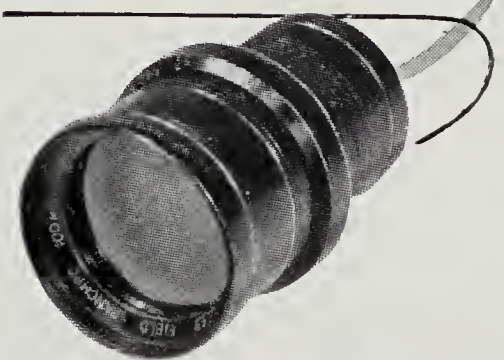
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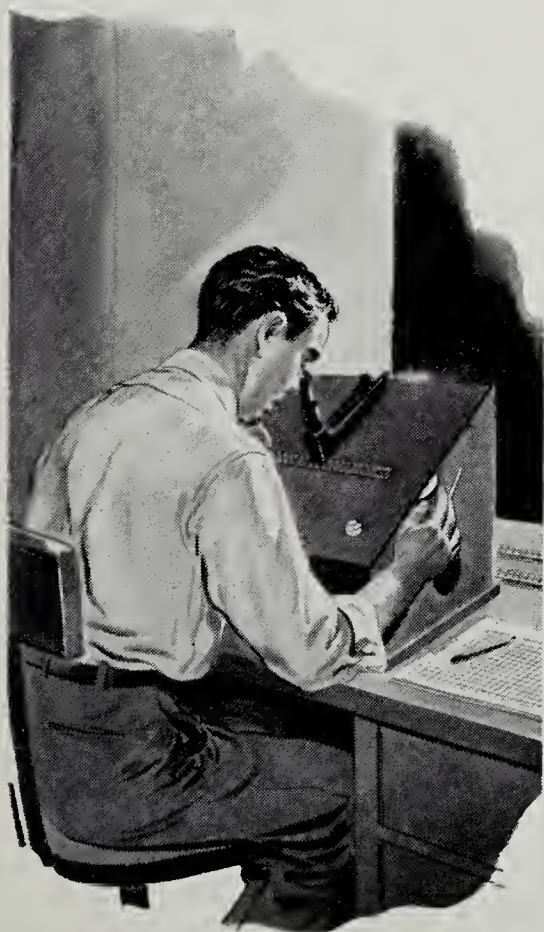
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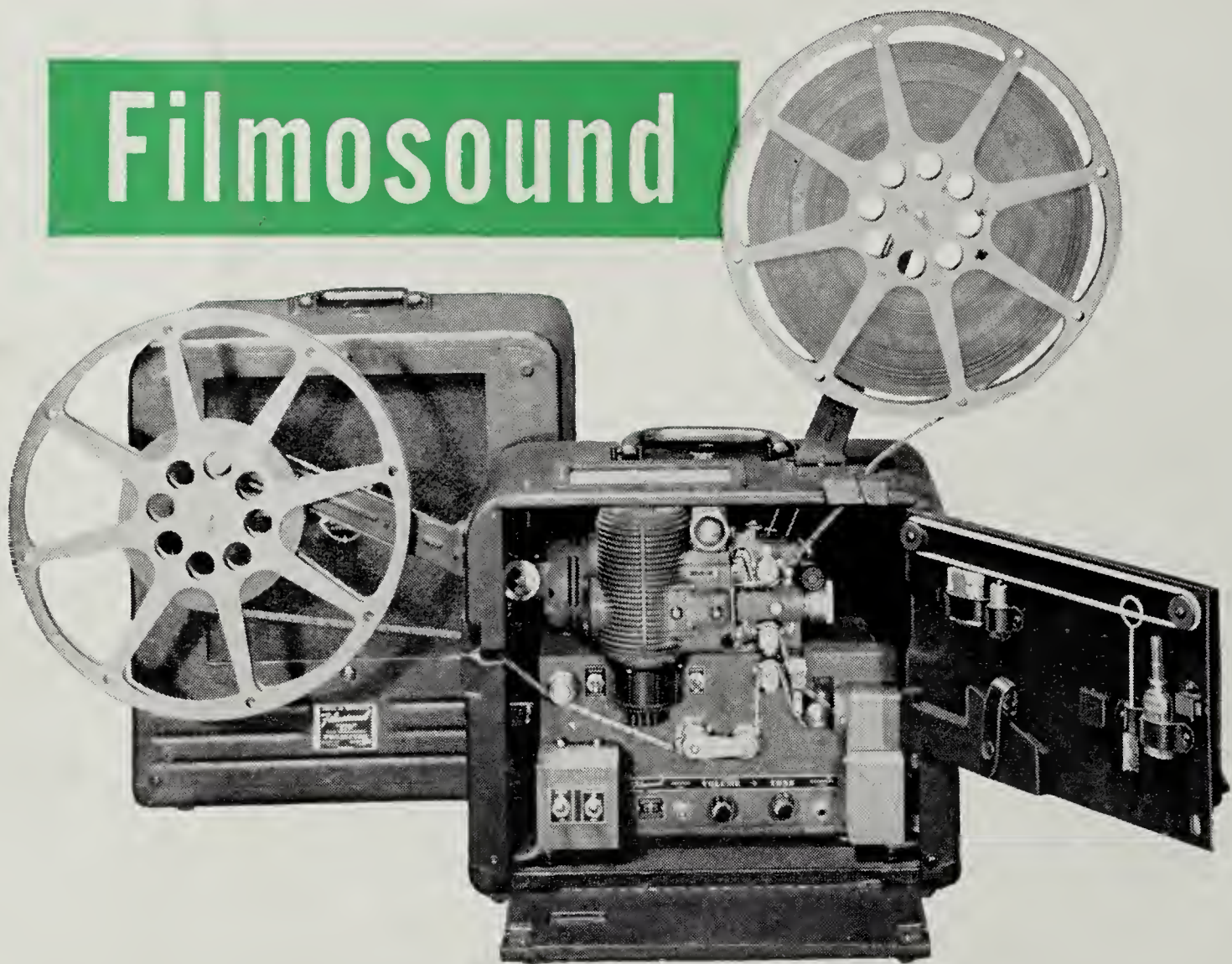
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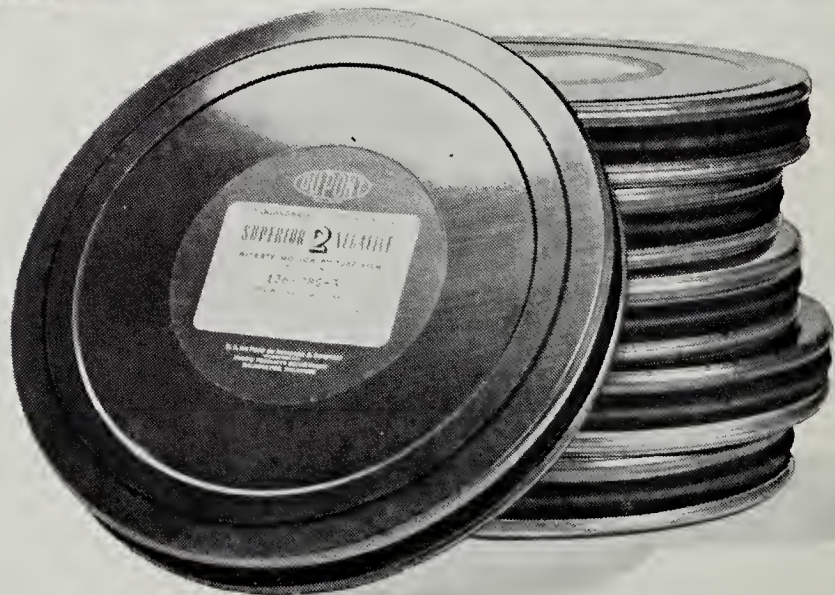
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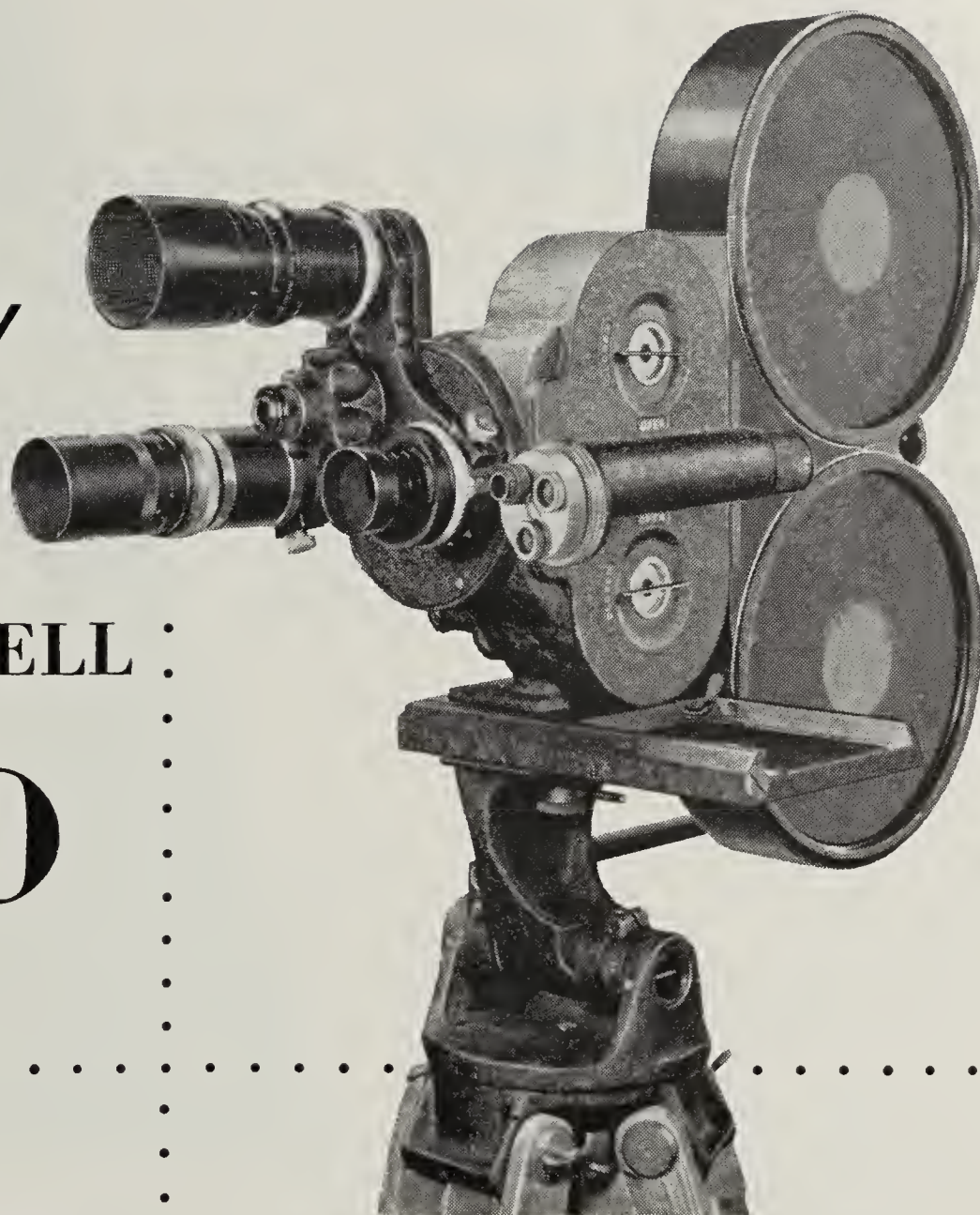


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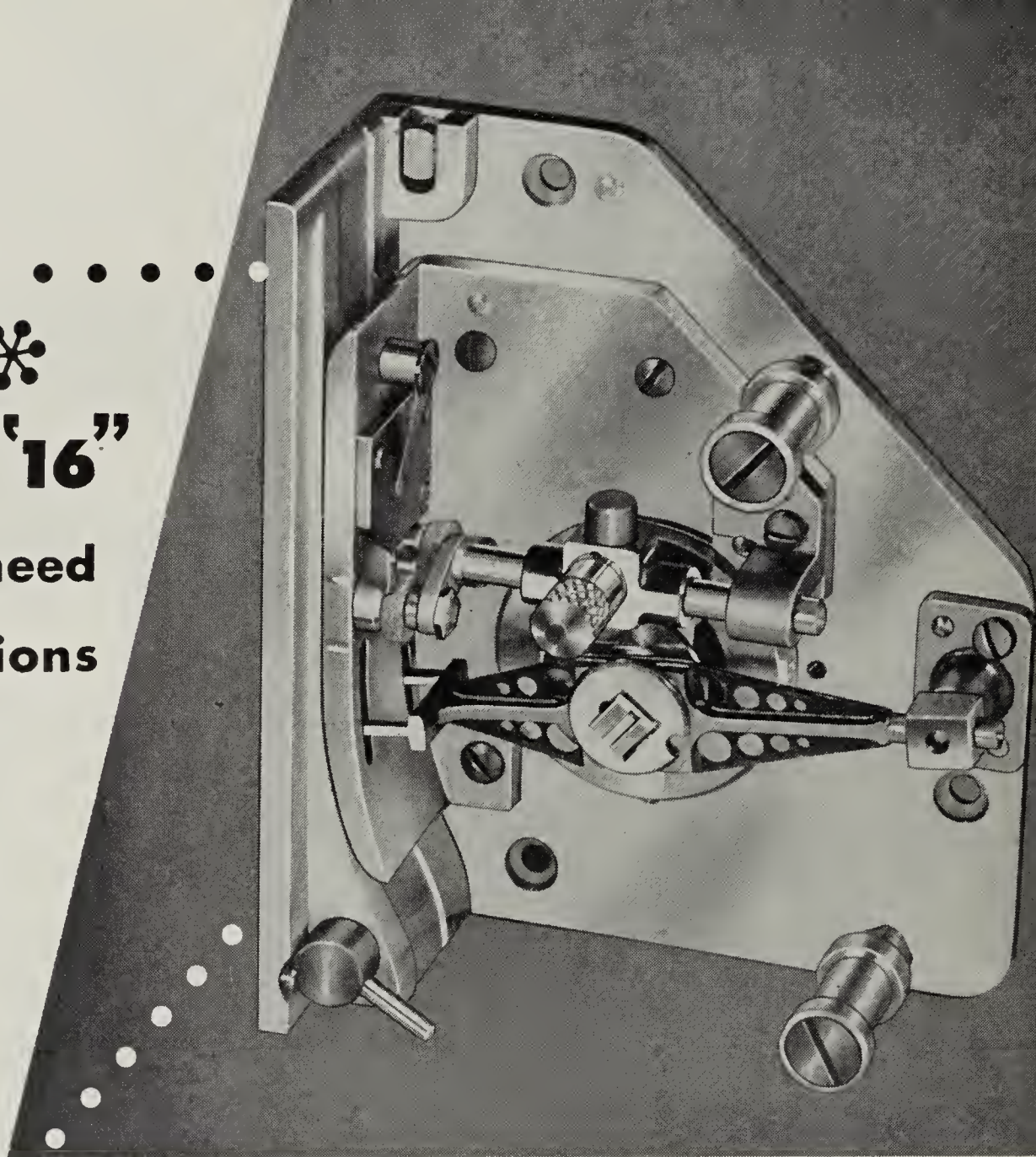
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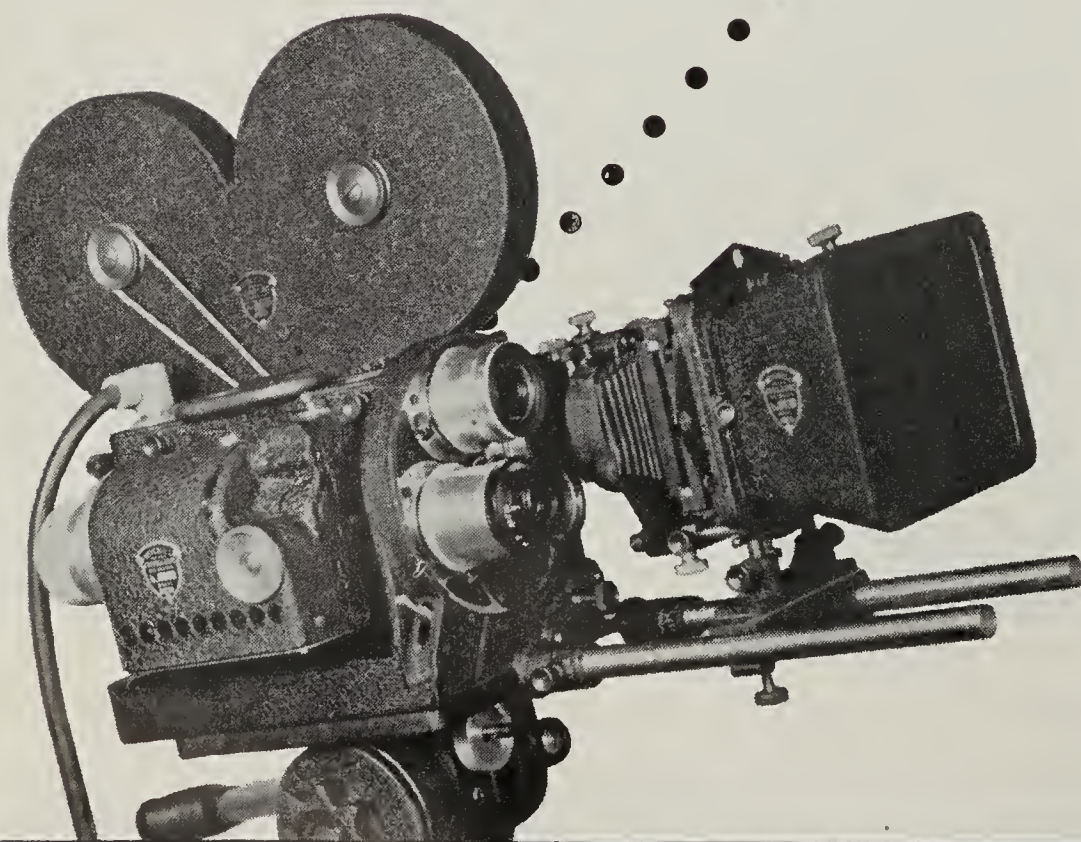
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THE MOTION PICTURE CAMERA MAGAZINE

VOL. 29

JUNE, 1948

NO. 6

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ON THE FRONT COVER—William Bendix, who stars and plays the title role in "The Babe Ruth Story," takes some practice swings for the camera. Director of Photography Philip Tannura, A.S.C., is seated directly under the camera lens, with Director Roy Del Ruth watching the action at Tannura's right.

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# "BABE RUTH STORY"

## BASEBALL PRODUCTION

### ON THE STAGE

By PHILIP TANNURA, A.S.C.



PHILIP TANNURA, A. S. C.

**A**FTER more than a year of preparation—during which time every phase in the life of baseball's greatest hero, Babe Ruth, was thoroughly studied and checked—producer-director Roy Del Ruth launched production on "The Babe Ruth Story" for Allied Artists release.

For the first time in picture history, a replica of the Yankee stadium, New York, was built on a studio stage at a cost of \$30,000. And it is on this stage that most of the sequences depicting the action on the baseball diamond is photographed.

Decision to put the ball park inside the studio stage came after careful investigation and study of lighting conditions. After surveying all factors, it was decided that light conditions could be handled at an even level on the stage for all shots—but more important—we did not have to contend with uncertain weather from day to day on the outside when hundreds of extras were required for backgrounds. As a result, not a day's shooting was lost due to inclement weather conditions.

The lighting problem for this set had

to be carefully studied, as it had to appear on the screen as though it had been done at the actual stadium, with a documentary feeling rather than artificiality to the audience. As a result, all artistic effects in lighting were thrown aside, and we concentrated on an overall setup that would duplicate the actual sun.

With this basic premise, I discarded all thoughts and ideas of backlighting and highlights. As a preliminary, I obtained numerous press photographs of various baseball stadia, and carefully studied the lights and shadows falling across the grandstand and baseball field. A fortunate discovery in such examination of photos showed that—where a balcony (or so-called upper deck) projected over the lower grandstand, the crowds seated in the latter were mostly in shadows in the front rows, and tapered back into darkness.

This situation was an excellent break photographically, as we had painted backings of the lower grandstand, with outlines of thousands of spectators painted on them. My particular and most important assignment—as Director of Photography

—was to blend the real people and extras seated in the first several rows, with the painted spectators on the backings to provide illusion of the stands fully packed with people.

After this effect was accomplished, I turned to the complex lighting problem of the actual playing field. In general, studio stage exterior shots appear artificial due to the lighting employed. In order to make actors stand out, many backlights are utilized to prevent the setting from going flat. In addition, many of the sets are built close to the wall of the studio stage, thus restricting the Director of Photography from getting a realistic effect. Further, use of many backlights with your source

(Continued on Page 217)



At left is shown protective wire screen and stand for cameras used when shots were required from behind the batter and home plate for "The Babe Ruth Story." The baseball field replica on the sound stage is shown at right. Note blending of live extras in front rows of stands and painted spectators in the shadows in upper rows.



# TELEVISION AND THE MOTION PICTURE INDUSTRY

By W. W. WATTS

(Vice President of RCA in Charge of Engineering Products Division)

*(Editor's Note: This revealing address on the rapid developments taking place in television, and the relation of the motion picture industry to television, was presented by Mr. Watts at opening luncheon of the Society of Motion Picture Engineers convention at Santa Monica, Calif., on May 17, 1948.)*

IT is usual, in an address on television, to trace its growth, mention the first whirling disc scanners, and quote early dates. All of this is of little consequence compared to an appreciation of television as it stands today—an "infant" industry growing into childhood and an understanding of where, as a youth, it may go tomorrow.

Recently, we (RCA) published an advertisement announcing that television is now "Forty Million Big"—reference not to 40 million viewers, or anything like that number, but pointing out that television service now covers an area such that it is available to 40 million people. Quite an audience, even for this town of superlatives!

Or consider that for many years every broadcast of the NBC Symphony under Toscanini had been viewed in one of the largest studios by capacity crowds. Yet, on the night when it was first televised, it was seen and heard by more people than the sum total of all the previous studio audiences.

To recognize the import of this, a brief glance at some current and future statistics is needed, although these statistics seem to shift almost momentarily:

There are now in operation 26 television broadcast stations.

F. C. C. Construction Permits have been granted for 68 more stations. Behind these

stand the applicants for 219 additional stations although only 135 can be presently granted because of limited channel availability.

If the currently proposed F. C. C. revision of television channel allocations is enacted, then, ultimately, there will be channel space for 953 stations in 456 cities—with an audience that could grow to equal the estimated 66 million radio sets now in 37 million homes.

There are, of course, other forms of television than the home type discussed thus far; i.e., Large Screen Television—a nomenclature sometimes applied to television pictures from 15" to 20" to the one 15' x 20' which Warner Brothers will demonstrate to this convention later this week.

Although past usage has invariably linked these systems to the "theatre," it is our belief that theatre television is but one of many applications for large screen television equipment.

Such equipment will be used for audiences at television studios since large numbers of visitors to studio sets actually in use is as impractical in television as in motion picture studios—perhaps worse.

Promotional use in connection with sports and news events will also be made; may, in some cases, displace the "moving light" bulletin boards now widely used by newspapers.

Overflow auditoriums, department stores, hospitals, hotels, cocktail lounges, and night clubs provide additional fields of usage.

There are other uses for television, too; cameras on the front of guided missiles

provide a picture by radio to permit guiding the missile to its target; underwater television has obvious uses for locations now beyond man's grasp; or, for hospitals where famed surgeons can demonstrate their technique to audiences far in excess of the capacity of normal surgical amphitheatres. In motion picture studios, directors—on two-dimensional television screens—can view tomorrow's "rushes" while the scene is being shot; can view from an easy-chair on the floor what is being filmed by the motion picture camera as it gyrates above some huge set on the end of a camera crane. Further extension of this principle indicates the possibility that in future warfare the Commander-in-Chief may observe action in various overseas combat areas from a central control room in Washington.

With possibilities such as these, several of the motion picture companies have actively begun their participation in television:

Paramount, through television station operation and film storage demonstration at the New York Paramount Theatre, have shown a live interest in television.

Warner Bros. and Twentieth Century-Fox have filed applications for television stations in several cities.

More than a year ago, development work at RCA indicated the attainment of large screen television pictures on a basis superior to pre-war performance. Some of the motion picture companies were interested. Active equipment inquiries came from national circuits, local circuits, and independent theatres. However, until programming possibilities had been explored and customer "know-how" had been developed, we were not too sure what equipment would ultimately best suit our customer needs. We could easily "build a boat that couldn't be moved up the cellar stairs." Accordingly, several motion picture companies were offered what have since been called "Joint development contracts" under which we agreed to furnish:

Technical information and "know-how."

Engineering assistance.

A large screen projector capable of throwing a 15' x 20' picture, and ultimately, an 18' x 20' picture.

A large screen projector capable of 6' x 8' projected pictures.

A kinescope photography system which, when coupled to a high-speed developer, is capable of feeding film to a standard theatre projector in a short time cycle—less than 1 minute.

The services of trained theatre service engineers.

As you all know, Warner Bros. and Twentieth Century-Fox joined us in this undertaking and now have some of the equipment in operation and the balance scheduled for early delivery.

These systems are all constructed as



professional equipments without regard to physical dimensions or installation requirements. Indeed, the larger projection unit, employing a 42" reflector, contains the largest Schmidt lens system now in use, although an astronomical telescope will eventually be in use at Mt. Palomar with a 72" reflector. This 42" television unit is affectionately referred to as "Behemoth, Mar I!" because of its resemblance to a gigantic Bendix Washer.

It is from the use of these systems that it is believed information will come on programming and installation requirements from the specialists in theatre programming—you, the motion picture industry!

The kinescope photography system mentioned can also be used for "remote" photography from sets, i.e., a television camera picks up the scene and feeds it to a viewing monitor at a remote point where it is first photographed on film. Results to date—of course inferior to regular motion picture practice, but capable of substantial improvement after further work, and potentially useful in creating new techniques of motion picture production.

But, to return to the theatre program. What, but actual experience, will teach all of us how the great potentials of television can best be used in the theatre? Will it be for news? For sports? Do you interrupt programs for "late flashes"? Which programs should be stored? Which repeated? These are a few of the problems.

Another programming problem concerns theatre television use of broadcast material. Today, even with hundreds of thousands of television receivers in use, still only a small part of the general population has access to televised programs. Hence, at this stage and for some time to come, much of the remaining population may be willing to pay admission solely for the privilege of seeing certain events. But later, when the public is saturated with home television receivers—*then* will broadcast television material have a place in theatres?

What value has the "closed circuit program," which will not be available on home receivers? Will theatre interests outbid broadcasters for certain outstanding events? Will you, or really the public, want separate television theatres? Or, will "Dad" watch the boxing matches in the lounge while "Mom" and the "kids" watch the pictures?

These are a few of the programming questions that experience alone will answer and represent the kind of answers sought from the development contracts with Warner Bros. and Twentieth Century-Fox.

Such questions, and a most of others, must be faced—now. Television is moving fast.

How the motion picture industry fits

into the television picture will be determined solely by the motion picture industry itself. And I believe it must be determined quickly.

Television is here—and must be reckoned with. Decisions must be made, and to make them a whole body of facts and knowledge must be assembled. To do this job will require your participation. We of the equipment field cannot provide the answers you of the motion picture industry will need to determine your future course. Sound added new dimension to the silent motion picture industry, and brought a revolution.

Television broadcast stations already use large amounts of film fare for programming. They're obtaining some of it made years ago! Why does the public keep looking at the current film fare? Novelty and lack of competition! Increased audience and paid advertising will demand and get better film programming. In our opinion, advertisers will finance much of this film programming because the American pattern of free television, like free radio, we are convinced is already here to stay.

You've heard film storage and kinescope photography systems mentioned—The business of photographing on film and picture from a special high-grade television monitor. This makes the television broadcaster a picture producer—of sorts but a picture producer—perhaps chiefly for syndicate or transcription purposes but, nevertheless, a picture producer!

You will notice that thus far relatively little has been said about the precise nature of programming, much about equipment. Essentially, that is our Company's position. When we manufacture and sell theatre film projectors and sound equipment, we do not tell the exhibitor what films to run. That's his business and one in which he's well skilled!

And talking of equipment, may I get commercial for one moment and tell you that there is one additional RCA television item shortly due on the market in limited quantities. This is a large screen television projector capable of 7' x 9' picture, suitable for theatre lobbies and lounges, to be sold at a nominal price! We are already convinced it has a great and interesting future.

Let me pause a moment and go back over the broad panorama of television equipment. As you know, television stations have, for some time, been using sensitive, image orthicon cameras with speeds greater than any photographic stock *you* can use. As a matter of fact, this is daily procedure in the 26 television stations now in operation and, of course, will be in the nearly 1000 that may yet come into being.

Remember, too, that these stations are already freed from restraints of their own studios. They range far and wide, and from remote locations pick up and origi-

nate programs of interest that are, with great ease, fed to the television transmitter by means of microwave relays. The availability of this type of equipment in a few brief years represents no mean accomplishment.

You are all aware that nation-wide television station chaining is on the way—by telephone company coaxial cable and microwave relays—now serving the Eastern Seaboard and rapidly being extended westward—by Western Union microwave circuits newly placed in operation in the East—or by station-owned microwave relays, some of which have been functioning for some time. You see—a list of equipment available for the work of a new industry is beginning to grow.

Add to that the equipment I have previously mentioned for large screen theatre and commercial use and the list has grown still larger. Of course, much of this equipment is currently turning out technically crude fare. Consider for a moment the type of picture that would be produced if one of your best stages, complete with lighting equipment, cameras, sound recording equipment, and all the other accessory items were placed at the disposal of inexperienced personnel.

Broadcasters need your techniques your "know-how." They can learn much from your lighting, make-up, direction, sound recording, and other techniques. Only a few television shows, like the New York Theatre Guild presentations, come close to your standard.

It is obvious that much of this equipment which we have been discussing utilizes motion pictures or motion picture techniques in some form. It has been estimated that television stations of this country will ultimately require more feet of film than Hollywood now produces, primarily because of the fact that there are few chances of extended runs on television. Very few pictures bear any repetition with the same audience. If you could build a theatre large enough to accommodate all of the patrons of a two-week run, you would show your film only once—that is television.

Let's do a little forecasting based on current AM-FM broadcast practice and see if we can get some idea of what the potential film usage of television might become. Today there are about 2500 AM-FM stations on the air. One-half or 1200, are chain or network affiliates. I'm speaking only of the four major chains. They operate about 16 hours per day. To be conservative, let's say they use only five hours of chain-originated material daily. That adds up to 4 chains at 5 hours or 20 hours daily, times 365 days, or 7300 hours of network originated material.

Now let's see how those figures might apply to television. I have already mentioned that the FCC has proposed nearly

(Continued on Page 209)



# THE APPLICATION OF MOTION PICTURE TECHNIQUE TO TELEVISION

By RALPH B. AUSTRIAN

(Foote, Cone, & Belding)

*(From an address delivered by Mr. Austrian to members and guests at the regular monthly meeting of The American Society of Cinematographers, May 24, 1948. Mr. Austrian is with the New York advertising firm of Foote, Cone & Belding.)*

\* \* \*

The day of motion picture films produced exclusively for television is close at hand. The rapid increase in commercially operated video stations, together with the large number of applications for additional stations on file with the F.C.C., are some of the factors which lead to this conclusion.

30,000,000 sets are expected on the market shortly. At this rate, the cost of making motion pictures exclusively for television would be warranted. With television techniques currently more backward than motion picture photography in its pioneer days, professionally-made motion picture films alone, provide the answer to popular entertainment demands.

Although on May 21, 1948, in 14 states, there were only 25 stations operating commercially, 352 are now in sight, with an eventual total of 1000 stations saturating available wave bands.

In the East, from Boston to Virginia, seven stations are interconnected and are already operating simultaneously. When considering the fact that Toscanini's single televised concert was seen and heard by more people than the sum total of his audience in his ten previous years of broadcasting ten concerts a season, the implications of video's future are fantastic.

Motion picture films are necessitated by the many inadequacies of live television, and by the great popular response to this type of entertainment.

Inadequate studio facilities provide one of the defects of live television. NBC, CBS, and DuMont, the three main stations, are operating in small, badly equipped studios. Inadequate lighting, which is either too hot or too flat; shadows ensuing from the use of multiple cameras; the inadequacy of a general lighting set-up, which may be good in the case of one camera, but ineffective, when another is shooting; the absence of effective editing devices; necessary limitations upon the kind of shot used, and the difficulties of "off-mike" situations are further problems.

On the content side, Hooper ratings have established that old feature films have far greater audience appeal than newsreels, musicals, quiz programs, interviews and dramas.

Lighting presents the greatest single technical problem in live show production today. Television started out using banks containing hundreds of small hot lights because the original television camera was sensitive at the blue end only. Although a fine normal image was obtained, the actors found the heat resulting from so much light unbearable.

About a year and a half ago a new television camera was introduced, which is about 67 times as sensitive as the earlier camera. Since it is sensitive in the red end of the spectrum only (unlike movie



KODAK TV RECORDING CAMERA SHOOTS MONITORING TUBE—Edgar O. Dixon flips a switch starting a new 16 mm. television recording camera developed by Eastman Kodak Company at Rochester, N. Y. The camera produces movies directly from the face of the tube.



film which is sensitive from red to blue), less light is needed. However, it does produce a coarse grained image, shows up the most minute facial defect in indoor shots, and makes for a slight waviness. In the reproduction of outdoor events, the results are more satisfactory.

When shooting live shows, it is advisable to keep away from the extreme low end and the extreme high end of the gray scale. That is, the television film should not have any white whites or any black blacks. The entire tonal range should be from light gray for faces to a less-than-black for such things as shadows and dark clothing. Development should be full, but prints, either thirty-five millimeter contact or sixteen-millimeter reduction, should be from two to three points lighter than for theatrical release. If one of these prints is viewed on a regular projection machine, it should give the appearance of having a gray tone over the entire frame. If this procedure is followed, faces will no longer be two black spots and a pair of lips in a white mask. The faces will really show. For optimum reproduction, the television system demands about as many dark tones as there are light tones. Avoidance of abrupt changes in adjacent scenes is also a wise procedure.

Keeping the main characters as nearly as possible in the center of the finder is also helpful. Due to the curved surfaces of the receiving tube, if they work toward the edges, faces will get fatter, and horizontal distortion will be evident. It also helps to mask the finder down a little bit on all four sides. The same applies for written titles. Keep them in the center of the finder with generous margins on all four sides.

Although the fluorescent lights now replacing the former lights do not throw off heat, they do result in flat lighting.

The necessity of using four cameras on the average live show presents the same problems which faced the early motion picture cameramen when sound came in.

Another difficulty facing the television cameraman is the fact that he has no way of knowing in advance when he will be "on the air." Until he receives directions through his earphones to "dolly in," or "out," as the case may be, from the director watching the main screen, and until a red light flashes in his finder, he has no way of knowing what to do, or if he is "on the air."

With four cameras and attendant cables, the lights are inevitably in the way of one or more of the cameras. The necessary general lighting further eliminates the possibility of good close-up lighting.

If the characters in a stage play are expected to go to another set, a black out occurs while they are going around stage. The absence of good cutting or editing

techniques is a decided disadvantage since the show is "on the air" constantly.

Another disadvantage of live shows is the impossibility of reverse angle shots as well as many of the other shots available to the veteran motion picture photographer. An attempt to shoot a reverse angle shot would result in an image of the camera shooting from the other side.

An additional problem is presented by the shadows cast by the mikes in the boom. This, too, was a familiar problem to motion picture cameramen in the days when sound first came in.

Attendant variations in sound "off mike," and the large and bulky cameras present still additional difficulties.

Television cameras make use of a conventional lens with a larger plate. Speaking of lenses, the Zoomar lens, although widely touted as a television discovery,

has long been used in movies. While capable of achieving dramatic swooping down effects, it is unable to produce a sharp image, when traveling quickly from a long shot to a close-up.

One great hope of improving live show television lies in more extensive use of projected backgrounds, so effective in motion picture photography today. If results can be obtained comparable to those achieved by the motion picture photographers' use of projected backgrounds, less lighting will be necessary.

The various problems facing television cameramen today are similar to those which faced motion picture cameramen in the silent and sound stages of their industry's development. There is no doubt, therefore, that the advice of experienced motion picture professionals would save television technicians a great deal of unnecessary grief and expense.

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## 25 YEARS AGO

### With A.S.C. and Members

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- World-travelling Glenn Kershner described his one-man film-making expedition into Mexico in the spring of 1923; and the excellent photographic potentialities of the land of the Aztecs.

- Phil Whitman, then secretary of the A.S.C., had joined the Douglas Fairbanks unit as specialist in effect and trick photography under Director of Photography Arthur Edeson for "The Thief of Bagdad."

- Goldwyn Studios in Culver City (now M-G-M) switched from glass-covered stages which provided actual sunlight during production, to closed stages and full dependance on electric lighting for sets.

- H. F. Koenekamp completed a Larry Semon subject, "The Shop."

- Henry Sharp and Kenneth MacLean were jointly photographing a Dorothy Davenport starrer for Thomas Ince Productions.

- After completing a group of features for Warners, Homer Scott returned to the cinematographic staff of Mack Sennett.

- L. Guy Wilky was in charge of photography for the William De Mille feature, "Only 38" at Paramount.

- Burton Steene, while on a filming tour of Europe, was engaged by a German producer to make aerial sequences for a German production.

- John Dored was busy travelling through Europe photographing events for an American newsreel company. He had recently covered Germany, Poland, Russia and Latvia.

- Sam Landers was installed as cinema-

tographer-in-chief for Finis Fox Prods.

- Phil E. Rosen was elected chairman of the executive council of the Motion Picture Directors Association.

- Victor Milner described his photographic adventures in making a picture of the Hopi snake dance ceremony in Arizona.

- Andre Barlatier wrote an article explaining his achievement in double-exposing semi-invisible or spirit forms for the Goldwyn feature, "Earthbound."

- Harry Perry described a camera motor drive devised for making aerial shots where cramped space in the photographic plane did not allow the accepted hand-cranking of those days.

- David Abel was in charge of photography for "The Barefoot Boy," which Mission was producing.

- William Fildew joined Tod Browning camera staff on "The Day of Faith."

- George Barnes pulled out for New York to photograph a Cosmopolitan feature.

- Walter Griffin wound up camera work on "The Silent Partner" for Paramount.

- Ben Kline was back at Universal after recovering from a three week illness.

- James Van Trees was off on location jaunt to photograph "The Huntress" for First National.

- Charles Schoenbaum was completing "The Heart Breaker," Agnes Ayres starrer for director Wesley Ruggles in New York.

- Homer Scott was photographing "The Extra Girl," Mabel Normand starrer, for Mack Sennett.

- Harry Thorpe was shooting "John of the Woods," a Dinky Dean production.

- Henry Cronjager was in New York for Famous Players-Lasky.

- Mitchell Camera Corp. was adding to its plant and staff to increase output of the professional cameras to meet demand.



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# COLOR—WHAT IT IS— HOW TO USE IT

By RICK MANSELL, B.Sc., A.R.C.Sc.

COLOR is not a substance possessing weight and particle size. It is an internal sensation produced in us as the result of the action of light rays on the retina of the eye. It is the result of a visual reaction stimulated by certain nerve centers of the eye. Color is, therefore, a physiological response to the stimulus of certain light wave vibrations. It is first produced in the human eye mechanism and then translated by the mind of man into certain abstract ideas. To produce this sensation of color some form of light is necessary.

The most common source of light is that emitted by the sun. It can be demonstrated that sunlight is composed of light rays of various colors which possess varying wave lengths. For example, after a summer's rain there are water particles floating in the atmosphere. These possess the ability to break up the sunlight into its constituent colors, producing the complete spectrum as is observed in a rainbow. We are all familiar with the separation of sunlight into its component colors by passing it through a glass prism. In a similar way a rainbow is caused by drops of rain which themselves act as agents to separate the component parts of the sunlight that shines through them to produce that optical phenomenon which we call the spectrum.

The different colors of which a given light is composed, when arranged in order of their wave length constitutes the spectrum of that light. All light from glowing bodies has a continuous spectrum, that is to say, that there are no blank spaces between the different colors. Red possesses the longest wave length of the visible rays in sunlight, while violet has the shortest. All the other colors are arranged between these two. In order that we may remember the actual order of the arrangement of these colors we use the word Roygbiv. In this word we have the first letter of the colors composing the visible spectrum. The colors in this spectrum are red, orange, yellow, green, blue, indigo and violet.

When light of any type strikes certain surfaces the material composing these surfaces will absorb some of the colors in the light and will reflect the remainder into the eye of the observer. It is that section of the spectrum which is reflected

that controls what is known to us as the color of the surface. For example, if a particular surface absorbs the Roygbiv component of the light striking it and reflects the Y portion then we designate the surface as being a yellow surface. We say it is yellow because it selectively reflects the yellow portion of the spectrum. Thus, a particle of the pigment chrome yellow absorbs all the component parts of the spectrum with the exception of the yellow. A particle of a purple lake will absorb all the rays of light with the exception of the red and the blue, and the combination that reaches us of these two colors is purple.

However, when a large proportion of the sunlight is reflected from a certain surface without any such process of selective absorption then we get the sensation which we have all agreed among ourselves to call white. When most of the sunlight is absorbed by that surface and very little reflected into our eyes, we designate that surface as being black.

The sunlight that reaches us varies in its composition depending upon the time of day. Thus, for example, there is less blue in the light that reaches us early in the morning or late in the afternoon as compared with the light that reaches us near mid-day, when the sun is high up in the sky. This factor is used whenever exact color matching is required in an industry.

The color of a substance will depend upon the character of the source of light by which it is illuminated. Thus, the composition of sunlight (daylight) is different from the light emitted by an electric light bulb. Hence, the color of a given substance will appear different when examined by ordinary daylight as compared with its color when examined by the light of the electric bulb. The difference is particularly noticeable in substances which have blue, green and purple colors associated with them.

If we use a red light in a room instead of the white light, then the reds, yellows and oranges, will all appear whitish while the blues and purples will appear blackish. If we use a blue light in a room instead of the white light then the reds and oranges will appear black, while the blues will seem white. It is, therefore, evident to us that the white light under which we

see the color of a substance must be very different in composition from the red or from the blue sources of light. In actual fact, we can consider white light as being composed of three kinds of light: red, green and blue.

There is a direct method of producing colored lights by causing certain gases to glow as a result of the action upon them of electrical impulses. Examples of these are the mercury vapor light, the yellow sodium light, the neon lights and the other gas filled lights in this class.

One more method of producing the color sensation in the eye is worth mentioning at this time, and that is the effect produced by a direct nerve stimulation such as by pressure or by sudden blow. If a person is suddenly struck in the eye when he is in a dark room then that person will see both light and color.

In this way we can see that color and light are inseparably associated. Without light there can be no color. The source of the light whether it be the sun or some artificial means produced by man, will have a profound influence on the color effect produced by any substance.

The term "color" is used in a general way to refer to any kind of light sensation other than black and white. When we look directly into a source of light we see the actual color effect of the light waves which that source sends out. When we look at a surface we see the color effect produced after that surface has absorbed a certain portion of the colors in the light that strikes it.

We must always remember that the color in the last analysis will depend on the kind of sensation produced in the visual centers in the brain of the individual observer, and this effect may vary from individual to individual. Fortunately, most of us are so constituted as to see approximately the same color in a given situation, but there is a minority whom we call color blind and who see colors in a different way from the majority. Their nerves may be dormant towards a certain range in the spectrum and we call them color blind toward that range.

The term "hue" is used to describe the dominant wave length present in a given color sensation. It is that quality which

(Continued on Page 214)



# A.S.C. OFFICERS INSTALLED AT GALA DINNER MEETING

With film stars Tyrone Power, Linda Darnell, and producer-director David Butler as honored guests, members of the American Society of Cinematographers attended dinner meeting on evening of May 3rd for formal installation of officers recently elected to serve for the coming year.

Charles G. Clarke was installed as president; Arthur Edeson as first vice-president; Alfred Gilks as second vice-president; William V. Skall as third vice-president; Fred W. Jackman as executive

vice-president and treasurer; Ray Rennahan as secretary; and John W. Boyle as sergeant-at-arms. The latter three were re-elected to their respective positions.

In addition to the above officers, other members of the Board of Governors include: John Arnold, George Folsey, Lee Garmes, Sol Polito, Charles Rosher, John Seitz, Leon Shamroy, Joseph Walker; with alternates comprising Ernest Haller, Sol Halprin, Arthur Miller, Hal Mohr and Joseph Ruttenberg.

Taking advantage of the presence in

Hollywood of many outstanding engineers, a technical meeting of A.S.C. was held on evening of May 24th.

Ralph B. Austrian of Foote, Cone & Belding, New York, spoke on "Application of Motion Picture Technique to Television Photography," (printed in this issue), and Thomas H. Miller of Eastman Kodak Company, Rochester, gave his paper on "Masking, a Technique for Improving the Quality of Color Reproductions," Cecil B. DeMille was honored guest of the evening.

**WHEN A.S.C. OFFICERS WERE INSTALLED.** Below, two views of the members and guests in main room of the A.S.C. clubhouse. At right: (standing), Tyrone Powers, first vice president Arthur Edeson, and president Charles G. Clarke; (seated) Linda Darnell and producer-director David Butler.





# "THE LADY FROM SHANGHAI"

## FIELD DAY FOR THE CAMERA

By HERB A. LIGHTMAN

ONE just naturally expects an Orson Welles picture to be *different*. Since he invaded Hollywood in a cloud of Martian terror several years ago, Welles has brought to the screen such off-the-beaten-track films as "Citizen Kane," "The Magnificent Ambersons" and "Journey Into Fear." Each of these has kicked over the traces in one way or another. "Kane," especially has been cited by serious students of the cinema as a revolutionary departure in film technique. While some of the stuffer critics branded the film as "consciously arty," none could deny that it was, at least, *different* . . . a refreshing respite from the glossily stereotyped style so typical of our entertainment films.

Welles, perhaps more than any other director of the present decade, has brought a certain freshness to the screen. His originality is based on the premise that anything worth showing to an audience is worth showing dramatically. If he sometimes goes a bit overboard with the result that the creaking of the machinery can be heard, he is still to be complimented for endeavoring to inject a fresh perspective into the presentation of cinematic ideas.

His latest film, "The Lady From Shanghai," is *different*. Technically speaking it is

an excellent job. It misses being an important film only because its plot is so cryptic that the motivations of the main characters become entangled to the point of obscuring the continuity. Even so, it is, because of Welles' fine direction and the striking photography of Charles Lawton, A.S.C., a powerfully entertaining film.

### Background For Murder

The plot of "Lady From Shanghai" is much too involved to permit summing up in a sentence or two. Suffice to say, it concerns a group of thoroughly disagreeable people (including the smoldering Rita Hayworth) who lure an unsuspecting but good-natured seaman (played by Orson Welles) onto a pleasure yacht bound from New York to San Francisco. It is evident from the very beginning that there is homicidal hanky-panky afoot—but the real mystery (at least from the audience's point-of-view) boils down to who wants to murder whom and for what reason. Everyone on the yacht hates everyone else, and each tries to lure the somewhat slow-witted seaman into doing the dirty work for him. The stakes in this murder derby appear to be a huge sum of insurance money, plus the undivided at-

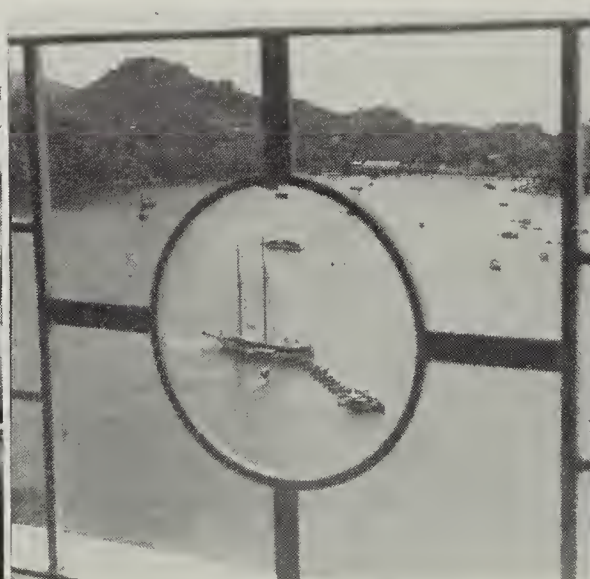
tention of Miss Hayworth.

With this network of conflict as a basis, the story begins in New York, goes aboard a yacht, stops at various Caribbean ports with a layover at Acapulco, Mexico, and ends up in San Francisco. It is in the City of the Golden Gate that Welles stages action against some of the weirdest locales ever seen on the screen. These settings include a dimly lit aquarium, the famous Mandarin Theatre in Chinatown, and the crazy house in a closed-for-the-season amusement park. If there is anything missing, it can only be the kitchen sink.

Although the audience may sprain its collective cerebellum trying to keep up with the vagaries of the plot, it cannot fail to be thrilled by the brilliant combination of action and photography which the picture boasts. Welles may confuse an audience but he is never guilty of boring one. In this case he has achieved some highly original effects, and has (as always) contributed heavily to the development of a fresh cinematic approach.

### The Camera Creates Mood

Before "Lady From Shanghai" actually went before the cameras, it was decided to infuse the entire production with an ominous mood. Director of Photography Charles Lawton, A.S.C., discussed various approaches with Welles and decided to achieve his effect through a combination of low-key interior lighting, and natural light sources with comparatively few reflectors for exterior scenes. In this way a smooth-flowing continuity was established between interior and exterior sequences. Transitions from outdoor to indoor sequence were executed without too severe



(Left) On location in Mexico, Orson Welles briefs his crew prior to filming a sequence from Columbia's "Lady From Shanghai." At his side is Director of Cinematography Charles Lawton, A.S.C., whose outstanding photography adds greatly to the impact of the film. (Center) Errol Flynn's yacht, the "Zaca" is shown anchored in Acapulco Harbor. Astern are a line of barges over which electrical cable was stretched between the yacht and the generator boat. (Right) For a scene shot in the jungle streams of Mexico, the camera is mounted on a dugout canoe alongside the boat in which the principle players ride.



a contrast in lighting largely because of the heavily filtered skies which dominate the exteriors. To gain this effect a combination of 23A and 56 filters was used.

The use of natural light for exteriors, with its harshly contrasting shadow and highlight areas, allowed for some very dramatic modeling of facial features. In one sequence shot at Acapulco during which Welles and a sinister lawyer climb a hill so that they can discuss a phoney murder proposition, no reflectors at all were used. Welles was wearing a white linen suit which made his face look dark and somber—while the lawyer wore grey clothes which did not contrast so sharply with his skin and made his complexion appear white and sickly.

Closely complementing the dramatic interior and exterior lighting, are the dynamic compositions which cinematographer Lawton has applied so effectively. A distinct departure from conventional technique is the use of the wide-angle lens for extreme close-ups of people. The resulting distortion is directly in key with Welles' desire for exaggeration in these shots. In many cases the exaggeration was enhanced by filming such close-ups from weirdly grotesque angles.

Perhaps the most striking sequence in the entire picture is that filmed in San Francisco's Steinhardt Aquarium. A masterpiece of mood, it is lighted solely by sources simulating the light from the display tanks. The players (Welles and Miss Hayworth) are thrown into silhouette against these tanks for the most part, and are effectively rim-lighted when the camera adopts another angle. What really inspires shivers, however, is the huge close-ups of grotesque sea-creatures which form a background to the players as they deliver their staccato dialogue. By means of background projection the movements of conger eels, sharks and an octopus were precisely timed to match the thought provoked by the dialogue.

For example, when Miss Hayworth warned Welles that her husband was plotting a nefarious murder scheme, a huge shark glided behind her. When she spoke of the lawyer, a slimy eel dominated the background. Enlarging of these sea creatures through process photography lent impact to the symbolism.

### Problems of Location Filming

In order to shoot the location sequences for "Lady From Shanghai," a company of 50 Hollywood actors and technicians flew to Acapulco, along with 60 Mexican extra players and technicians from Mexico City. More than 15 tons of equipment were shipped from Hollywood, one order of six tons comprising the largest single air express shipment ever undertaken by a movie location company.

For the yachting scenes in tropical Mexico, Columbia Studios chartered Errol Flynn's luxurious yacht, the *Zaca* and Flynn himself served aboard as skipper. Scenes were filmed above and below decks, at anchorages in Acapulco Harbor, at Fort San Diego in Acapulco Bay, at Morro Rocks and other scenic spots, as well as at sea. A lavish new night club, *Ciro's*, located atop the swank Casablanca Hotel in Acapulco, also served as a setting, as did the 25-mile stretch of white sand beach at Pied de la Cuesta.

The transportation of heavy sound and camera equipment through the tangled Mexican jungle was a major problem, but was overcome by the sheer manpower of several hundred hired Mexican porters and canoemen. Sound trucks and generators were placed on native canoes lashed together to form barges, and then were floated through jungle-cluttered streams into shooting position.

Shooting aboard the yacht was, from the space standpoint very difficult, and these scenes, as they appear in the picture, are necessarily cramped in composition—but this actually works in favor of the overall effect because it produces an au-

thentic atmosphere of crowded life aboard a small yacht. During filming aboard the *Zaca*, a long line of native dugout canoes anchored astern formed a bridge from the barge holding the generator so that electrical cables could be stretched for the camera and sound equipment.

In filming sequences at sea, the camera crew discovered that they could not depend upon their usual meter readings. Reflections from the surface of the water kicked up more intensity than the meter recorded, causing over-exposure of the scene. This effect was noted in the screening of the first rushes, and a series of experimental tests was made to arrive at some sort of rule-of-thumb that could be used to compensate for the additional amount of light.

### Back to Hollywood

Sequences shot at the studio presented almost as many problems as those filmed on location. Welles, always ready to break precedent, rung up a new record for the longest *dolly* shot ever filmed. With his camera mounted on a 22-foot crane, Cinematographer Lawton kept his lens trained on Miss Hayworth and Welles as they rode for nearly three quarters of a mile in a horse-drawn open Victoria. Several huge arc lights, a sound boom and the camera crane rolled the full length of the shot next to the Victoria.

Stages 8 and 9 at Columbia Studios—which adjoin and can be opened up to form one huge sound stage—were transformed into the eerie "fun house" set which serves as locale for the picture's final sequence. Studio workmen constructed sliding doors, distortion mirrors, and a giant slide 125 feet long which began at the roof of the stage and ended in a pit 80 feet long, 40 feet wide and 20 feet deep at the far end of the stage. Half-way down was a 30-foot-high dragon's

(Continued on Page 213)



"The Lady From Shanghai" is photoplay which draws its force from the taut direction of Orson Welles and the camera artistry of Charles Lawton, A.S.C. (Left) The main characters confront each other in the mirror maze of a "crazy house," exciting amusement park locale of the film's final sequence. (Center) Wide angle compositions shot from a low vantage point add drama to the story's presentation. (Right) The aquarium sequence depends upon low-key lighting, close-ups of grotesque sea creatures and staccato dialogue synchronized to their movements for its weird effect.



# REPORT ON SMPE CONVENTION

Sensational progress of television, and the impact of the latter on the motion picture industry, highlighted the 63rd semi-annual convention of the Society of Motion Picture Engineers held at the Santa Monica Ambassador hotel, Santa Monica, California, May 17th to 21st. Between the opening luncheon on the 17th, when W. W. Watts, vice president in charge of the Engineering Products Division of RCA, gave a most revealing talk on "Television and the Motion Picture Industry" (printed in full in this issue), and the closing session at Warner Brothers Studios on evening of the 21st when large screen television was demonstrated and details of the system explained, television was the dominant subject.

The SMPE convention recently closed on the west coast was one of the most successful in the organization's history—both from the standpoint of registrations, attendance, and informative papers and demonstrations on new products and practices for the improvement of motion picture production techniques.

Among the many pertinent papers and demonstrations on the program were:

## MOTION PICTURE PHOTOGRAPHY

*"Principles and Practice of Three-Color Subtractive Photography," by W. T. Hanson, Jr., and F. Richey, Kodak Research Laboratories, Rochester, N. Y.*

The color vision characteristics of the eye are discussed and the rules which are followed are used to show the requirements for the "perfect" additive and subtractive, three-color photographic process. Since these requirements are not achieved in practice a theoretical study of a practical color process may not always give an adequate analysis of its usefulness. However, such an analysis may point out some of the pitfalls which occur in practice. For example, many subjects may appear the same color to the normal eye and yet give different results when photographed. Also, any given color may be reproduced incorrectly by any process in use.

The effects on picture quality of changes in contrast, balance, and a variety of other variables are shown. The restrictions which some of these factors place on the use of color films are mentioned.

The dye characteristics which cause quality loss in duplicates are discussed and the various compromises which must be made in obtaining adequate quality duplicates are reviewed.

*"Masking: A Technique for Improving*

*the Quality of Color Reproductions," by Thomas H. Miller, Eastman Kodak Company, Rochester, N. Y.*

Currently available subtractive color photography processes provide pleasing pictures of most natural objects. However, when an original color photograph is the subject, as in the cases of duplicating and copying, the resulting reproduction is usually not satisfactory when compared with the original.

Differences between the original and the reproduction are primarily due to the high photographic contrast and the optical characteristics of the dyes in the original.

Masking to improve the quality of color reproductions involves making an auxiliary image, generally by a photographic method, and registering it with the original color transparency. Reproductions are made from the combined transparency and mask.

The characteristics of the color original and the unmasked reproduction and the modifications of the original which are necessary if the reproduction is to match the original, determine the method for exposing and processing the mask. While a single silver mask is usually most practical and sufficient, multiple masks are required for complete color correction.

In Ektacolor negative film two mask images are automatically formed as the dye images are developed during processing. Two of the three couplers from which the dyes are produced are colored and the positive images formed by the couplers remaining after processing constitute the masks.

*"An Improved Safety Motion Picture Film Support," by Charles R. Fordyce, Eastman Kodak Company, Rochester, N. Y.*

Extensive experimental work on Safety Cine Film support has resulted in an improved product which offers possibilities for professional motion picture use.

This product is a highly acetylated cellulose acetate with physical properties which are considerably different from those of ordinary commercial cellulose acetate previously used. Certain improved physical characteristics and improved aging properties of this base material are described in detail.

As a Cine Positive film support the high acetyl cellulose acetate is shown to give satisfactory behavior in printing, processing, and projection operations and compares favorably with present standard Release Positive Film.

Experimental studies on the use of the

high acetyl base for 35 mm. Negative Film are described showing that this base will lend itself to use for negative materials. Particularly important is the fact that this base offers a very low degree of shrinkage on long time keeping.

*"Film Standards, Film Dimensions and Behavior," by A. C. Robertson, Eastman Kodak Company, Rochester, N. Y.*

This paper deals with certain aspects of the problem of improving 16 mm. projection quality.

The accuracy of slitting and perforating of 16 mm. film would have to be considerably better than that of 35 mm. film if the same picture steadiness is to be obtained. The required accuracy is of the same order of magnitude as the best that can be obtained commercially. Variations from the nominal dimensions always occur and follow a typical probability curve.

Although practically all commercial film is slit and perforated to within the recognized tolerances, shrinkage of film with time or changes in dimensions due to changes in humidity means that film as used is often outside of the original specifications. This rarely introduces difficulties because the industry has recognized these effects. It has, in fact, utilized the shrinkage of the negative on the continuous printer. As potential shrinkage is reduced the long time shrinkage effects are improved but difficulty is introduced in making quick release prints. The possibility of new standards for slitting and perforating is considered.

*"Flicker in Motion Pictures; Further Studies," by L. D. Grignon, 20th Century-Fox Film Corp., Beverly Hills, Calif.*

Flicker is defined for the general case and additional information on subjective effects and analysis is presented. The subject is then restricted to those types of flicker which are the result of equipment deficiencies, and quantitative methods for measuring such effects are described.

The application of testing methods to specific equipment, the results obtained, and certain remedial measures are discussed. Finally, recommendations for future work in this field are submitted.

*"U. S. Navy Photography in the Antarctic During the Recent Operation Highjump," by Lt. Charles C. Shirley, USN, Bureau of Aeronautics, Navy Department, Washington, D. C.*

The Navy's Operation HIGHJUMP, 1946-47 was by far the largest expedition to enter the south polar region. The primary purpose of the Operation was to train personnel, test equipment, and im-



prove operational techniques in sub-zero temperatures. Every phase of the operation and the performance of equipment undergoing tests were photographed in 35 mm. B&W and 16 mm. color motion pictures with a view toward producing technical and training films for educational purposes.

The many difficulties inherent in photographic operations in sub-zero temperatures and polar regions require special techniques. These and the malfunctions of cameras, causes and suggestions for improvements are treated.

The Navy is developing cameras more suitable for use in frigid areas.

Research is being conducted for a less brittle plastic for film bases than is now available for cold weather photography.

The presence of more light on the surface of the south polar ice cap on overcast days than on bright, clear, cloudless days seriously affects photographic exposure. This phenomenon confounds a photographer until he becomes aware of it, as he is accustomed to giving more exposure on overcast days instead of less. The abundance of light in the Antarctic necessitates modification of exposure meters.

*"Processing Control Procedures for Ansco Color Film," by James E. Bates and*

*I. V. Runyan, Ansco, Binghamton, N. Y.*

Reproduction processing of Ansco Color Film requires continuous control of the solution compositions. Early experience showed that frequent change of processing solutions was necessary to maintain consistency. New replenisher formulas are described which together with regular sensitometric controls and occasional chemical analysis have proven successful for maintaining the processing solutions in a satisfactory condition indefinitely.

Color balance differences resulting from varied types of agitation, depending on the processing equipment, may be adjusted by changing the chemical constitution of the first developer.

*Demonstration Lecture: "SEEING LIGHT AND COLOR," by Ralph M. Evans, Eastman Kodak Company, Rochester, N. Y.*

The process of seeing is somewhat different from commonly accepted notions. Three sciences are involved in the understanding of its principles and characteristics. All vision of the external world requires light. Light is a physical phenomenon and the principles of its action are described by the science of physics. This light enters the eye of an individual and affects the nerve endings on his retina.

From these an electrical current is produced which travels back to his brain. This part of the subject properly falls in the science of physiology. Certain effects produced in the brain follow well defined laws and are quite predictable in nature. These effects are enhanced by the the science of psychophysics.

After a brief discussion illustrating the part played in vision by these differing types of action, the present lecture is devoted to a carefully illustrated discussion of the way in which the mind interprets the information so received. A distinction is made between form and color vision and it is shown that for the most part what we see depends as much on ourselves and our experiences as on the external reality which the light presents to our eyes.

The discussion then turns to the seeing of color and in particular to the seeing of colored objects. By a rather complete series of pictures it is shown that seeing is largely a matter of recognition of objects with properties believed to be possessed by these objects. From this it is shown that the mind has the ability to see several things simultaneously at the same spot. It follows that it is not entirely the physical or physiological facts which determine what we see but also

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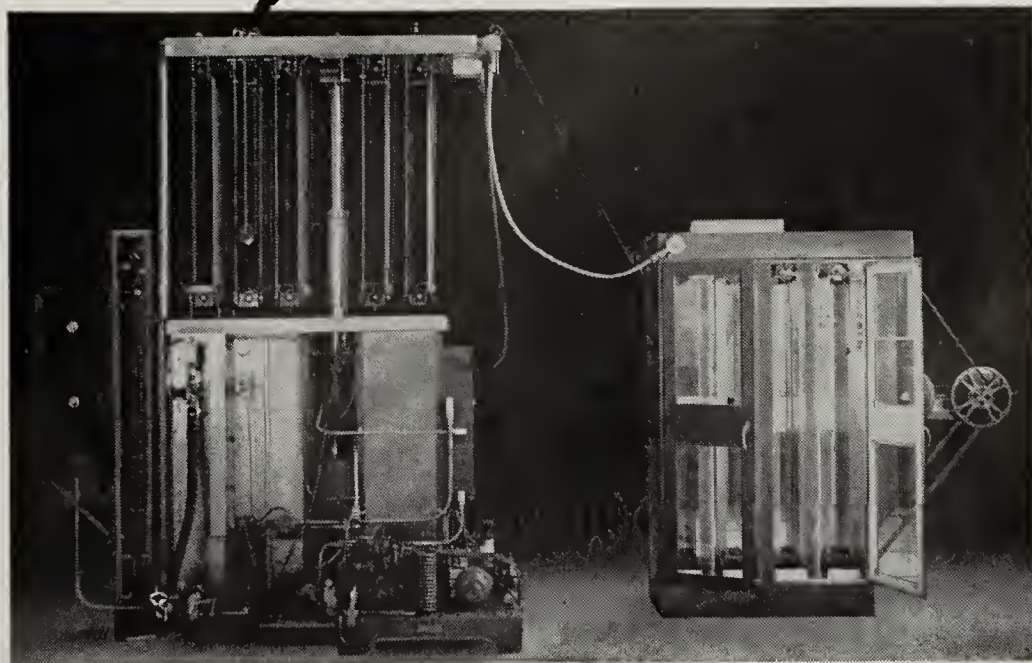
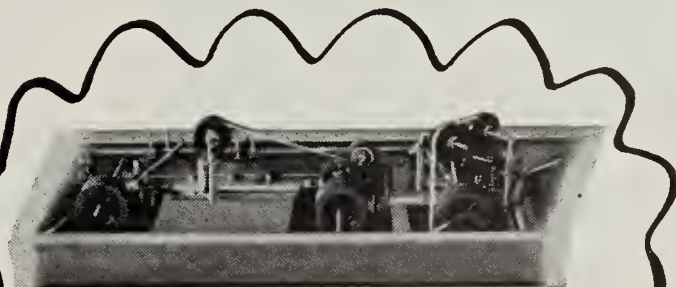
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to a great extent our knowledge of external reality as supplied by the mind. As the best example of this it is shown how it is possible for a person to see simultaneously objects illuminated by light of a certain color and at the same time see the true colors of the objects themselves. This is one of the most basic types of vision and yet it cannot be predicted from the simple physics of the light or the known properties of the eye.

## MAGNETIC SOUND

"Magnetic Recording for the Motion

Picture Technician," by Dorothy O'Dea, RCA Victor Division, Hollywood, Calif.

It is the purpose of the first half of this paper to present to the motion picture technician a review of magnetic recording theory. There are many excellent articles available which treat the various aspects of this subject. Those who are interested in the detailed scientific explanations are referred to these articles (a bibliography has been prepared) and the extensive patent literature. This paper attempts to consolidate the information in these articles in simplified form and pro-

vide a useful picture of the phenomena in magnetic recording and reproduction for those whose primary interest is in the application of the theory.

The second half of the paper consists of experimental data taken with the new RCA magnetic recording equipment which is described in another paper. Input-output, frequency response and distortion data which were taken under test conditions familiar to motion picture technicians are presented.

"A 35 MM. Magnetic Recording System," by Earl Masterson, RCA Victor Division, Camden, N. J.

The introduction describes how the idea was conceived of designing and building a number of kits to add magnetic sound recording facilities to a standard photographic recorder. It is believed that by starting magnetic recording in this manner it will enable the studios to obtain some practical experience without the expense of a complete film handling mechanism and yet will not interfere with photographic sound recording production work.

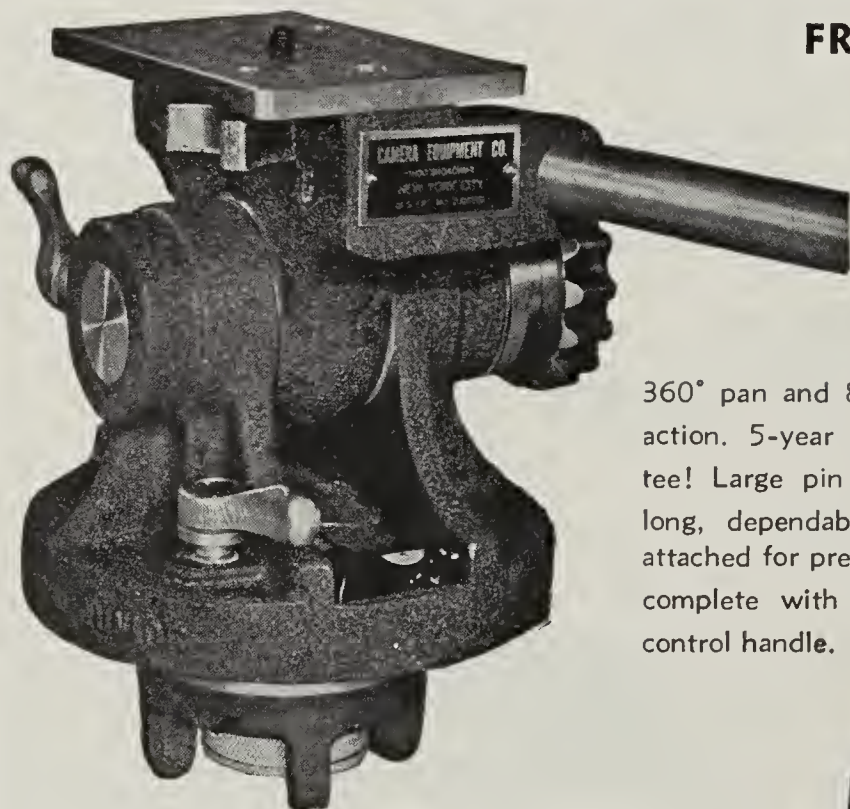
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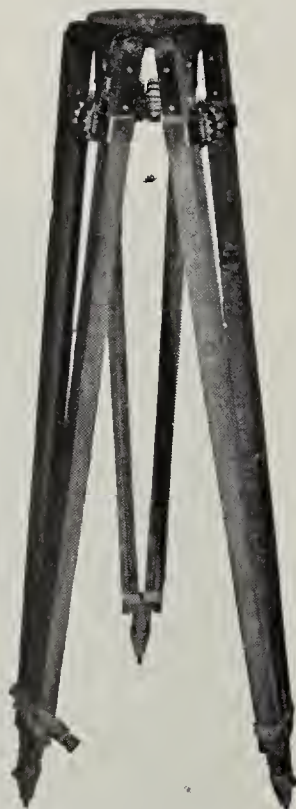
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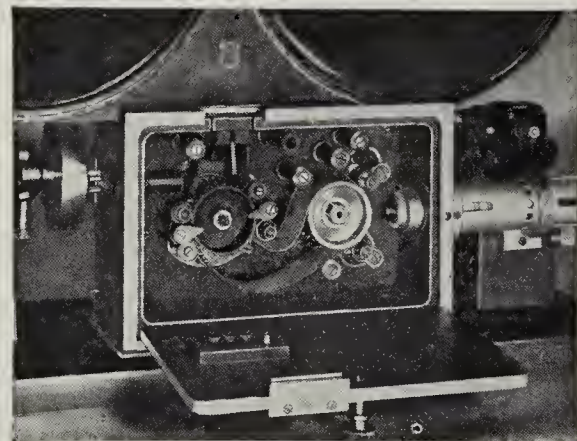
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nents of the kit and discusses the operational features.

*"Some Distinctive Properties of Magnetic Recording Media,"* by R. Herr, B. F. Murphy, and W. W. Wetzel, Minnesota Mining & Manufacturing Company, St. Paul, Minn.

Information is presented relative to the adjustment of bias current in magnetic recordings and the various effects of bias changes on distortion, frequency response, overload characteristics, and permanency are discussed. Other factors which influence frequency response are outlined briefly and it is shown that the inherent frequency response of the medium is difficult to divorce from effects due to the recording system. The problem of noise is presented in general terms and the nature and level of the noise from a DC saturated medium is advanced as an important criterion of quality.

*"Magnetic Sound for 8MM. Motion Pictures,"* by H. A. Leedy, Armour Research Foundation, Chicago, Ill.

#### Demonstration

Satisfactory recordings of sound for amateur use on 8 mm. motion picture film have been made possible by the development of an improved magnetic powder material. Using a suitable binder this magnetic powder is coated on 8 mm. film in the form of a track 0.030 inch wide placed between the sprocket holes and the edge of the film, thus avoiding the necessity of reducing the already limited picture area. Several 8 mm. "silent" projectors have been converted for use with the magnetic sound film.

The performance advantages, and limitations of this development will be discussed. The paper will be concluded by a short demonstration.

#### SOUND RECORDING

*"A Variable Area Light Valve Modulator,"* by Lewis B. Browder, Western Electric Company, Hollywood, Calif.

A variable area modulator is described which employs the ribbon light valve as the basic modulating element. Double width push-pull variable area sound track or standard width d lateral sound track may be recorded at will by inserting the appropriate light valve into the modulator. The light valve is registered in

place in the modulator by indexing dowels and securely locked by means of lever controlled clamping springs.

The light valve ribbons are oriented so as to be parallel to the direction of motion of the film. The ribbon edges are projected at ten times magnification onto the film to define the amplitude co-ordinate of the recording image while the image height is determined by a narrow rectangular stop which is imaged onto the films at a 70:1 reduction in height by a cylindrical lens system.

The modulator is a completely self-contained unit embodying the basic components for the recording optical system, an optical system for rear projecting an enlarged image of the ribbon aperture onto a viewing screen, a photoelectric monitoring system, and an exposure meter.

*"Volume Compressors for Sound Recording,"* by W. K. Grimwood, Kodak Research Laboratories, Rochester, N. Y.

This paper deals in a general way with volume compressors of the type used in

sound recording. The subject matter is divided into six sections: the desirability of volume compression, compressor characteristics, problems arising from the use of compressors, classification of the types of compressors with the advantages and disadvantages of each type, compressor design and the measurement of compressor performance.

*"A Single Element Unidirectional Microphone,"* by Harry F. Olson and John Preston, RCA Laboratories, Princeton, N. J.

A single element unidirectional microphone has been developed for use in sound motion picture recording with the following characteristics:

1. Single ribbon type.
2. The back of the ribbon is coupled to a dampened folded pipe and an acoustical impedance in the form of an aperture.
3. Improved cardioid directional pattern.
  - a. In the high-frequency range

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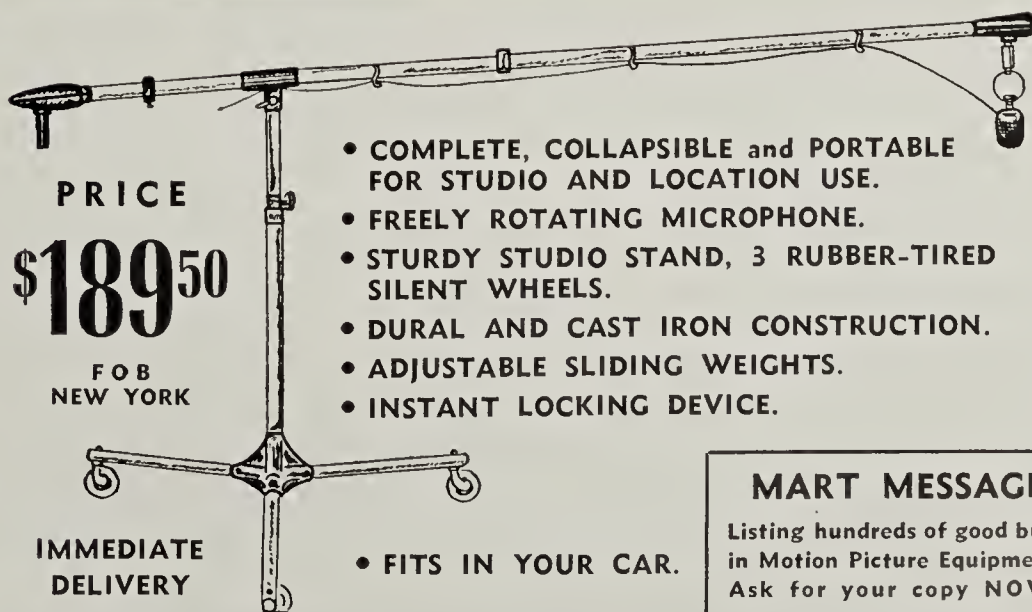
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*"RCA Mobile Recording Unit Channel," by Watson Jones, RCA Victor Division, Hollywood, Calif.*

The new RCA Unit Channel comprises a complete studio type recording system which has been designed to simplify installation and to provide a system which can be delivered to the customer assembled, wired, and tested, ready for use. The unit channel was designed primarily for mobile use and as such requires storage batteries as its source of power; however, where AC is available the batteries can be "floated" and the motor system operated

directly from the three phase supply.

Complete charging equipment, necessary power controls, and camera motor speed controls are contained in the unit. There are several standard truck bodies available on the market which will accommodate the unit channel.

*"Variable Area Recording with the Light Valve," by John G. Frayne, Western Electric Company, Hollywood, Calif.*

This paper describes how various types of variable area track, including standard and push-pull, may be obtained by various arrangements of the light valve ribbons. A mathematical analysis is made of the effect of various light valve constants on the magnitude of the resonance peak and frequency response measurements of an improved light valve with high magnetic damping are given.

A theoretical study of the effect of azimuth deviation on unilateral, dylateral and bilateral tracks is included in the paper and is illustrated with graphical charts of the distortion produced by various amounts of azimuth deviation for these types of tracks.

*"Sensitometric Aspect of Television Monitor Tube Photography," by Fred G. Albin, RCA Victor Division, Hollywood, Calif.*

The performances of the iconoscope and orthicon pick-up tubes and kinescope monitor tubes constituting a television system are considered in regard to the response vs. level characteristics. A non-linear electrical network is advocated for combination with the iconoscope to equalize the Gamma variations to a constant Gamma approximately complementary with the monitor tube Gamma. Another non-linear electrical network is advocated for combination with the orthicon to reduce the Gamma of this camera to the same Gamma as the corrected iconoscope camera.

A direct positive photographic technique is described using a negative monitor picture obtained by electrical phase reversal, and the toe region of the positive film characteristic. A general mathematical expression for the shape of the film toe as a function of the Gammas of

of the television camera and monitor as required for linear overall performance is derived.

The merits of such a photographic technique are economy, simplicity, rapidity of processing, and greater average screen brightness.

*"16 MM. Film as a Medium for Television Program Material," by John A. Maurer, J. A. Maurer, Inc., Long Island City, N. Y.*

Much of the 16 mm. film that has been available for television broadcast purposes has fallen far short of the technical quality that is possible when the best presently available commercial techniques are used.

This paper discusses the quality possibilities and limitations of 16 mm. cinematography and sound recording to show that it is readily possible to achieve quality in both picture and sound which should be adequate for the needs of television broadcast for a long time in the future.

## EQUIPMENT

*"Research Council Small Camera Crane," by André Crot, Motion Picture Research Council, Inc., Hollywood, Calif.*

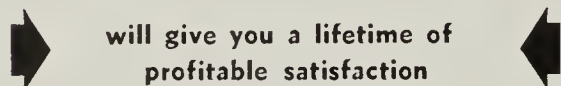
The Research Council small camera crane was designed from requirements and specifications set down by the Council's Photographic Committee. While similar in principle to other cranes, it embodies an entirely new design and built-in safety features. The crane dolly is electrically driven. The boom arm is manually operated and can be panned through 360 degrees. The crane is large enough to have a lens height of from 2 to 10 feet from floor level and small enough so that, fully equipped, it will pass through a doorway 6 feet high and 36 inches wide.

*"35 MM. Process Projector," by Harold Miller and E. C. Manderfeld, Mitchell Camera Corp., Glendale, Calif.*

A studio type of process projector, designed and built to meet the specifications as set forth by the Motion Picture Research Council Committee, is described. Both the single and the triple head projectors are discussed.

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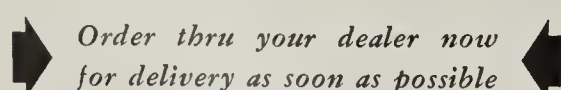
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# U.S. NAVY DEVELOPS SUPER-SPEED CAMERAS

**S**CIENTISTS of the United States Navy have developed a novel all-electric camera capable of taking photographic exposures at a 100,000,000th of a second—25,000 faster than the fastest motion picture camera commercially available.

This Zarem camera, invented by Dr. A. M. Zarem, heads the list of a series of ingenious precision time measuring instruments and devices used in photographic "Microtime Technique" and revealed publicly last month at the Navy's dedication of the new Michelson Laboratory at the Naval Ordnance Test Station, Inyokern, California.

Pointing toward highly increased precision and accuracy, these instruments open a new field of scientific analysis by means of what the Navy terms "synchronized microtime photography." The shutter of the Zarem camera has been operated so fast that light (which travels at the speed of one thousand million feet per second) moves a distance of only 10 feet during the time of one exposure. It is being used primarily for the study of certain rapidly changing phenomena which heretofore science has been unable to observe and record accurately.

The terrific speed of the Zarem camera is best illustrated by the fact that—if moving pictures of a bullet leaving the muzzle of a gun were taken at the rate of one hundred million frames per second and projected on a screen at the normal rate—the bullet would appear to require about six hours to travel the distance of 25 feet.

The extremely fast shutter is obtained through the use of an electro-optical "Kerr cell," a glass tube filled with Nitrobenzene in which a pair of electrodes is immersed. This Kerr cell is placed between two polaroids crossed so that no light can be transmitted. However, when high voltage is applied to the electrodes in the Kerr cell, the state of the polarization of the polarized light is immediately altered allowing the light image of the subject being photographed to pass through the camera lens to the film.

By controlled timing of the voltage, photographic records with an effective exposure time of one hundredth of a millionth of a second have been obtained. The primary applications of this technique

are to phenomena of ultra-short duration. The entire history of an event under observation may take place in one or a few millionths of a second.

## Bowen Ultra Speed Camera

Another type of ultra high speed camera disclosed by the Navy is the Bowen 76 lens camera, designed for the Navy by

Dr. I. S. Bowen, Director of Mt. Wilson Observatory. Usually designated as the RC-4, it is a hyper-speed camera designed to take 76 pictures at a maximum rate of 400,000 per second. The high framing rate is obtained by focusing the object on a mirror which—when rotated—will be successively "photographed" by each of the stationary 76 lens as they are illuminated in turn by the directed light from the rotating mirror.

At maximum operating speed, only 2.5 microseconds ( $1/400,000$  of a second) are required to take each frame with an exposure time of 1.1 microseconds. The pictures are approximately one half inch square, and are made on standard 35 mm. film. This camera is 37 inches long, 42 inches high, 43 inches wide, and weighs about 375 pounds. Because the exposure time is short and the optical speed of F:16 relatively slow, the RC-4 requires an ex-

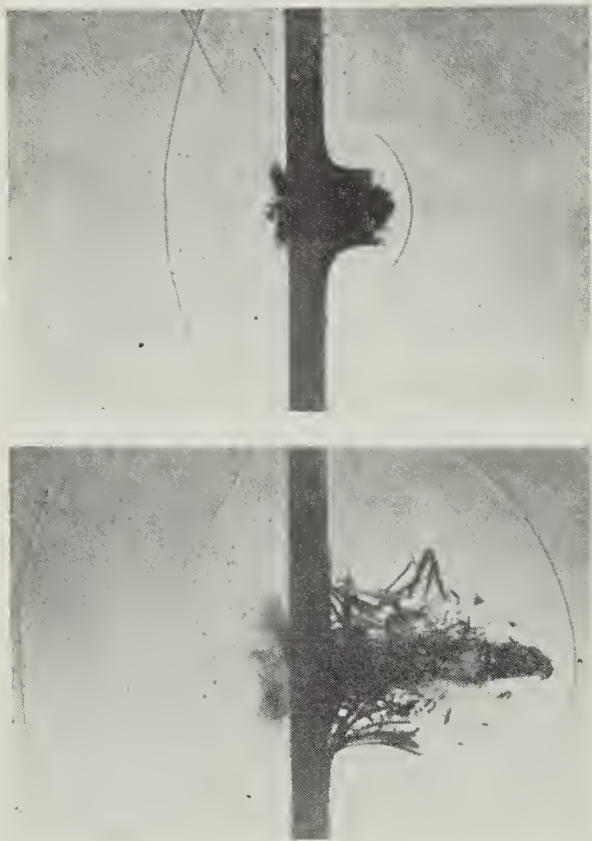


Dr. W. M. Cady, Navy scientist, is shown pointing to the row of 76 lenses of the Navy's high-speed Bowen camera. Exposures of 1.1 Microseconds have been obtained. The camera takes 76 pictures at a maximum rate of 400,000 frames per second. Effective use has been made of the camera in the study and development of high explosives.



tremely bright subject for best photographic results. The camera has been widely and successfully used in the study of high explosives.

The Bowen RC-3 camera is similar to the RC-4; using the principle of the rotating mirror, but containing no shutter. It consists of a field lens, horizontal narrow slit, condensing lens, rotating mirror and film four inches wide by 42 inches long. The field lens focuses the object under study on or along the slit of the camera. The condensing lens behind the



Shock waves created by a travelling bullet penetrating a one fourth inch sheet of plywood are graphically shown above. Note the echo shock wave receding on left of each photo.

slit directs that slice of the object on the slit to the mirror, from which it is reflected onto the film placed in an arc above the mirror.

The film and the slit are conjugate so that the object focused on the slit is also focused in a narrow line across the film. The usefulness of the RC-3 camera lies in its ability to show one-dimensional motion continuously as a function of time.

#### Microtime Photography

Explanation of synchronized microtime photography is briefly described in re-

lease by the Navy, which first explains the shutter operation as follows:

"Ordinary light consists of a random mixture of electro magnetic vibrations of no directional preference. When the vibrations exist in only one direction, the light is said to be plane polarized. Polarizers are materials which transmit light, the vibrations of which are in one direction only—all other vibrations are suppressed.

"Elliptically polarized light is the most general type of polarized light. Plane polarized and circular polarized light are special cases of elliptically polarized light. The state of polarization of light may be altered in several ways; in the Kerr cell, electrically induced optical activity is used to alter at will the state of polarization of light passing through it.

"The two polarizers are set for minimum transmission and at  $45^\circ$  to the electrode axis with no voltage applied to the electrodes, the plane polarized light from the first polarizer is completely extinguished by the second polarizer and no light passes through the shutter arrangement. The application of voltage to the Kerr cell electrodes A A' causes alternation in the state of polarization of the transmitted light; consequently the light transmitted by the second polarizer depends upon the voltage applied to the electrodes. The effective open time of the shutter is therefore limited to the rapidity with which the voltage can be applied to and removed from the cell electrodes."

#### Kerr Cell and Camera

A simple combination of a Kerr cell shutter and a conventional still camera may be used to obtain photographs with effective exposure times as short as thousandths of a millionth of a second, the Navy discloses. The effective exposure times obtainable with such a camera are determined by the voltage forming system, and are readily adjustable by means of plug-in type networks. Accuracy of timing pulses is monitored or checked by a special high speed oscillograph—which is capable of indicating time differences of two or three billionths of a second.

## IMPROVED SAFETY FILM ANNOUNCED BY KODAK

A new type of film base, adopted by Eastman Kodak Company for manufacture of much of its "safety" motion-picture film, was described last month before the national convention of the Society of Motion Picture Engineers in Santa Monica, California.

Charles R. Fordyce, superintendent of Manufacturing Experiments at Kodak Park, the company's sensitized-product plant in Rochester, N. Y., told the Society's meeting that since early in 1946 Kodak has replaced acetate propionate safety film support with a new, improved "high acetyl" acetate type.

He pointed out that Kodak has conducted research on safety film since the early 1920's and developed the first good safety film for its introduction of "home movies" in 1923.

The company's continued research brought a major improvement in safety film quality in 1937 when a change was made to cellulose acetate propionate base. Development of the present improved "high acetyl" formula is the result of extensive research since that time.

Essentially, the new film is made by retaining chemical "acetyl groups" which in the earlier process were washed away.

Fordyce said that considerable experimental work has been done on the new film to test it as a possible substitute for cellulose nitrate film, which is widely used for professional motion-pictures.

"In addition to experimental tests," he said, "the new film has been carefully watched through limited commercial trade use. Special prints of several feature pictures were circulated through film exchanges in different parts of the country.

"In these tests, for which alternate reels of safety and nitrate film were used in each print, satisfactory quality was obtained in every respect."

Safety film generally is slow-burning, in contrast with nitrate film which burns rapidly.

Commenting on the extensive laboratory test, Fordyce said that results with the new safety film show that:

Low shrinkage of the new safety base will keep the film free from "buckle" and the resulting in-and-out of focus images on the motion-picture screen.

The tensile strength, rigidity, and flexibility of the "high acetyl" films are more like nitrate film than earlier safety films.

Greater resistance to effects of moisture and humidity means less processing trouble as well as less film distortion.

Projection quality, which is better than earlier safety films, is equal to nitrate film in screen steadiness and appearance.

New cements, manufactured especially for use with the new film, will also make satisfactory splices with the older types of safety film and with nitrate film.

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## 'Television & Film Industry'

(Continued from Page 193)

1000 channel allocations in 456 cities. Now let's assume that 5 years from now—or you name the time, but it is inevitable—these 1000 stations are on the air and that they follow the current broadcast pattern. Let's say they carry chain material for the same 5 hours, and that one-half of 2½ hours is 10 hours per day—times 365 days gives 3650 hours of film.

That, gentlemen, comes to 1825 two-hour features or 14600 15-minute shorts or its equivalent—plus all of the additional film material, the chains and the 500 remaining independents will use, which is not network originated.

Now, I'm sure your imagination is as good as mine, so use your own figures. Discount mine or double them—it's a whale of a lot of film production. And I ask you, isn't that something for all segments of the motion picture industry to consider seriously? It will require far more film, more technicians, more talent, and more equipment than exists today.

I can think of no problem that all of us can look forward to with such high enthusiasm and opportunity!

## Colour Subject Available

A two reel film in Technicolor, titled "Colour," is now available to amateur movie clubs from British Information Services, 30 Rockefeller Plaza, New York, 20, N. Y.

Although not basing its premise on color motion pictures, it describes the nature of color and its many uses, and studies graphically the great chemical industry and development of modern synthetic dyes.

## Kodak Declares Dividend

Quarterly dividend of 35 cents per share on common stock of Eastman Kodak Company was declared May 18th by board of directors, who also voted regular \$1.50 per share dividend on preferred stock. All officers were re-elected at the same meeting.

## Floor Stand for Large Screens

Daylight Screen Company of Chicago announces a new floor stand for larger size projection screens up to nine by 12 feet. Model is completely collapsible, and weighs only 18 pounds.

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Signal recognition of the outstanding photography by Nicholas Musuraca, A.S.C. on the George Stevens production for RKO Radio Pictures, "I Remember Mama," was accorded the Director of Photography by E. I. du Pont de Nemours & Company on latter's Cavalcade of America program broadcast nationally over 153 stations of NBC on evening of May 17th.

Irene Dunne, star of "I Remember Mama," was star of the Cavalcade of America dramatic presentation, "Queen of Heart-

break Trail" on the coast-to-coast radio presentation.

In the closing remarks, the announcer finished the broadcast by stating: "Irene Dunne can now be seen in the George Stevens production for RKO Radio Pictures, 'I Remember Mama.' Miss Dunne's celebrated charm has been beautifully photographed in this production on Du-Pont Superior 2 negative by Cinematographer Nicholas Musuraca."

The broadcast was heard nationally by 13,000,000 persons, according to the Hooper rating.

## McNabb Re-Elected

### B & H President

J. H. McNabb was re-elected president and treasurer of Bell & Howell Company at annual meeting of company last month. Vice presidents for the ensuing year include: A. S. Howell, J. H. Booth, B. E. Stechbart, H. W. Haun, H. W. Remerscheid, E. S. Lindfors, and C. E. Phillimore.

Company report disclosed record net sales of \$18,083,325 for 1947. Production was at an all-time high, but consumer demand continued to exceed the capacity output.

## New Kodak 8 MM Projector Has 400 Foot Magazine

An improved model of the famous Kodascope Eight-90 projector—the Eight-90A—is announced by Eastman Kodak Company. Featuring 400-foot reel capacity, the new projector will permit showings up to 30 minutes in length without necessity of changing reels.

Taller base and extended reel arms are main difference over the popular Eight-90. The new projector has Lumenized Kodak Projection Ektanon Lens 1 inch f/1.6; 750 watt lamp; and carrying case.



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# AMONG THE MOVIE CLUBS

## Philadelphia Cinema

Program chairman Frank Hirst lined up the following attractions for the May 11th meeting of Philadelphia Cinema Club; "Our Baby," by B. H. Taylor; "Learn the Alphabet," by Victor Fritz; "Kodachrome Slides," by Mrs. J. H. Currens; demonstration of electric splicer by Marvin Epstein; and talk on use of lens tissues by Robert Haentze.

Members of the club participated in "Zoo Photo Day" on May 16th. Sponsored by the Zoological Society of Philadelphia and Guild of Photographic Dealers, the event allowed special privileges to photographers and a large number turned out to take advantage of the courtesies available.

Special attraction for the meeting of June 8th will be film produced by J. B. White on the development of the motion picture from horse and buggy days to the present.

## Minneapolis Octo Cine

Samuel Eyrse and his committee provided an informative program on "Exposure" at the May 25th meeting of Minneapolis Octo-Cine Club, held at the YMCA; after which several member films were exhibited. Entries for the 50 foot uncut film contest closed at the meeting, and judges will announce the winners at the forthcoming anniversary party.

## Brooklyn Amateur

Films exhibited at the May 5th meeting of Brooklyn Amateur Cine Club, held at Neighborhood House, comprised: "Thundering Waters," and "Locomotives,"—both by Fred Beach of New York Central Railroad; and "In the Nick of Time," produced by Syracuse Movie Makers. Several member films were run off for comments and suggestions by the club's clinical committee.

At meeting of May 19th, election of officers was held for the ensuing year, with nominating committee of Messrs. Sinclair, Gittell, Charmatz, Erles and Seckendorf presenting recommendations. In addition, another popular Gadget Night was staged.

## Tri-City Cinema

One hundred members and friends attended the May 20th meeting of Tri-City Cinema Club of Davenport, Iowa; Rock Island, and Moline, Ill. held at Utilities Auditorium, Davenport. Evening's program included: color film and slides, "Photographic Safari in Hollywood," by Dr. Paul White, with musical accompaniment by Mrs. White; color film and slides, "Spring Flowers," by Georgia First; and group of colored slides by Arthur Bartosch of the "Tulip Festival" at Pella, Iowa. Dr. James Dunn presented report of the nominating committee, with Albert Smick slated to be elected president for the coming year.

## San Francisco Westwood

Members of the Sherman & Clay Movie Club provided film program for April 30th meeting of Westwood Movie Club of San Francisco, held at St. Francis Community Hall. Subjects screened included: "Wandering Through Western Playgrounds," by A. Theo Roth; "Lake Tahoe," by George Sohst; and "Canadian Rockies," by Karl Gitschel.

Westwood's new monthly club bulletin, "The Rewind," which was launched in March, is one of the outstanding and informative bulletins issued by an amateur movie club. Other organizations desiring to exchange monthly bulletins with Westwood can address Denver Sutton, 725 Ellis Street, San Francisco, Calif.

## Los Angeles Cinema

Members of Los Angeles Cinema Club met at Ebell Club on May 3rd to vote for amendments to club's by-laws revising procedure for application for membership, and also to provide for payment of entrance fee by applicants. William J. Keim and Royal R. Moss joined the board of governors to fill vacancies of Burt Roberts and P. L. Goddard.

Program for the meeting included: group of 35 mm. color slides by Julia K. Owen to illustrate her talk on line composition; a discussion of color balance and composition by Thelner Hoover of U.C.L.A.; "Two Weeks Rest," by C. William Wade; and "Fat Man Goes Fishing," by Ted Phillips.

## New York Metropolitan

Metropolitan Motion Picture Club of New York City wound up its season's activities until September with meeting of May 20th held at the Hotel Pennsylvania. Film program comprised: "New York World's Fair 1940," by Ray Moss; "Vacation Highlights," by Terry Manos; and "Sunstruck," by George Mesaros.

Nominating committee consisting of Sidney Moritz, W. Eldridge Lowe, and Raymond Moss presented recommendations for successors to the three directors whose terms expire — Harry Groedel, John R. Hefe, and Ernest Miller.

## Alhambra La Casa

Regular monthly meeting of La Casa Movie Club of Alhambra, California, was held at the YMCA on evening of May 17th. Film program under chairmanship of John H. Clay included: "Autumn Vacation," by D. M. Gardner; "Orphans," by B. M. Elliott; "Flowers," by R. B. Vail; and "Holiday Vistas," by E. K. Kendall.

La Casa will celebrate its 11th birthday on June 21st.

## Utah Cine Arts

Al Morton provided a technical discussion on "Exposure" to feature the May 19th meeting of Utah Cine Arts Club of Salt Lake City. Film program of the evening consisted of a surprise film, and "Chasing Rainbows," by F. W. Anderson; "Delight Falls," by F. W. Anderson; and "The Thirty-Niners," by Al Morton.

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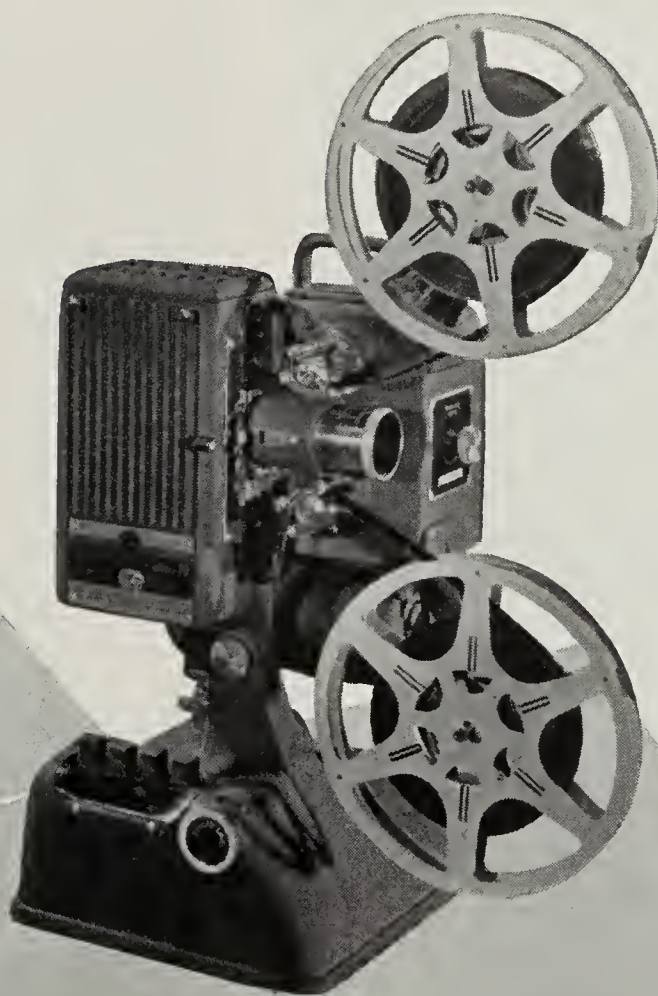
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## ORGANIZING AN AMATEUR MOVIE CLUB

**T**HE tremendous increase in the number of amateur movie enthusiasts during the past three years has generated widespread interest in the formation of amateur clubs in numerous communities. This fact is apparent from the large number of inquiries received, asking for information on how to organize such a group.

Initial steps can be taken by as small a group as five or six persons, who can meet informally to set plans for basic organization and a campaign for members among other movie makers in the vicinity. A temporary chairman should be selected to serve until the club is formally organized, a constitution and by-laws prepared, and officers elected.

Although the individuals interested in organizing the club must contact as many movie enthusiasts as possible, invaluable aid in securing members can and will be provided by photo shops and dealers in the area. The latter should be advised of the plan, and asked to display placard and distribute mimeographed notices giving time and place of initial organizational meeting. These notices can be handed out by the dealer, and—in some cases—be mailed to the most enthusiastic camera owners known to the dealer through his mailing list. The latter will cooperate fully, as the club operation will generate continuing business in cameras, equipment and film, which is naturally to his advantage.

At the organizational meeting, a committee should be selected to draft the constitution and by-laws which should provide for election of officers, members of a board of directors, and various committee chairmen that will be required.

Most clubs hold monthly meetings, at which time short business session precedes the showing of films—latter secured from other amateur clubs or companies, and pictures members have made themselves. From time to time, experts on various phases of movie making can be invited to give informative talks and demonstrations to properly guide members in producing and planning better pictures.

Regular film programs are an important requisite at all meetings, as members will pick up ideas from pictures exhibited, and thus improve their own product. Previous annual award winning films can be secured from the Amateur Cinema League of New York; and on inter-change from other amateur clubs around the country. Several equipment manufacturers—notably General Electric Co. and Bardwell & McAllister—have instructive films available on various phases of picture-making. Also, there are a number of large companies that have issued promotional films as travelogues or documentaries; and these

will be most suitable for programming as they will provide members with the professional 16 mm technique for improving their own pictures.

Club activities should be planned to reach every possible member, either on committees or constant approach for him to make and project a subject for the club programs. Periodic contests, for both general club and novice divisions, should be conducted to further generate members' interest. Suitable prizes naturally should be awarded to the winners in each division.

One noted amateur movie maker, who is a veteran in one of the largest clubs, issues the note of caution that—as in all social clubs—cliques might spring up to dominate the club activities through continual re-election. To prevent this, he suggests that the constitution embody a clause that an officer may not hold position for more than one or two years; and the job must not be undertaken by anyone who previously held the position, unless none others are available. This will spread the direction of the club's activities among virtually all members who have the time available for specific assignments.

Several of the larger clubs screen member 8 mm and 16 mm films on alternate meeting nights. This has proven successful in that the 8 mm filmers consider it unfair to have their pictures projected on the same programs with 16 mm—for obvious reasons.

Sameness in programming or meeting procedure should be avoided; and the program chairman should inject novelty into the proceedings, and the main objective should be to keep the meeting going at a lively pace. Many clubs have meeting places where members can gather prior to sessions for moderately-priced dinners and round-robin discussions on filming problems; and this feature—or the serving of refreshments during intermission of the general meeting—has been invaluable in generating good-fellowship among members and making them happy to be regular attendants at sessions.

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## 'Lady From Shanghai'

(Continued from Page 201)

head with moving jaws forming a gaping mouth through which the slide passed, and at the foot of the slide two huge turntables, each 35 feet in diameter and specially geared to turn in opposite directions were built.

As might be expected, these gadgets allowed for some very unusual photographic effects. For one shot, Lawton and his operator, Irving Klein, had to slide on their stomachs down the 125-foot zig-zag chute. The camera was mounted on a specially constructed mat which was built to fit the curved contours of the chute. Then, as Welles took a slide, Lawton and Klein, lying flat on the mat, slid ahead of him filming his speedy progress down the whole length of the slide.

A set representing a maze of mirrors and containing 2,912 square feet of reflecting surface was also constructed. Eighty plate glass mirrors, each 7 by 4 feet, formed the basis of this unusual set, and 24 distortion mirrors of similar dimension were interspersed for camera effect. Several of the straight mirrors were of the transparent "two-way" variety which permitted cameramen to shoot action through them from the non-reflecting side. The climax of the picture, during which the antagonists shoot it out in this mirrored room, is one of those unforgettable cinematic moments that seem to occur all too rarely these days. The multiple images and the crashing of glass are directly symbolic of the brittle, many-sided personalities of the characters themselves.

"The Lady From Shanghai" is a puzzling but thrilling picture to watch. Director-producer-writer-star Welles has given it the loving care which is characteristic of his screen endeavors. Cinematographer Charles Lawton, A.S.C., has achieved some extraordinary effects with his uninhibited camera. But the real importance of the picture is its originality, its departure from stereotyped techniques—a healthy sign for an industry that continues to grow.

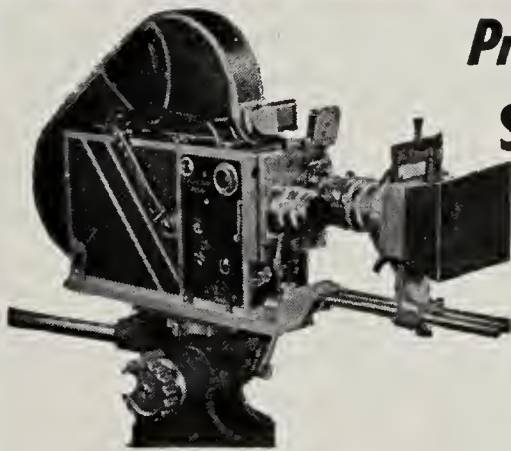
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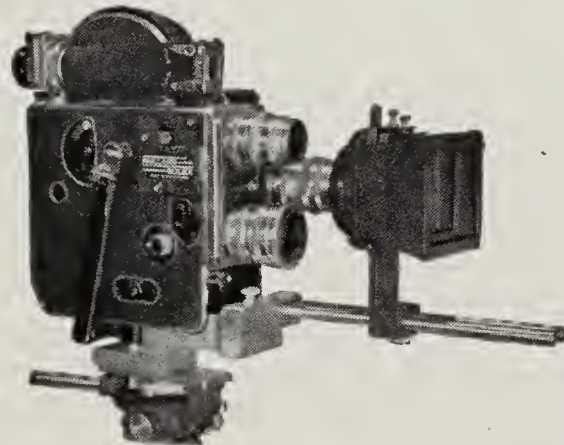
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## 'Color'—What It Is

(Continued from Page 198)

distinguishes a red from a yellow, or, a green from a blue.

The term "saturation" is expressed as the percentage of purity and defines how red or how yellow a color appears to be.

The term "shade" is used to modify that of hue—thus, scarlet is called a shade of red.

The term "tint" is used to denote the effect produced when a certain hue is modified by white—thus, pink is the effect produced when a red is diluted with white.

"Brightness" is used to distinguish a bright color from a darker shade of the same hue. Brightness is a common attribute by means of which we can compare a certain color to that in a series of greys existing between black and white. The brightness of an absolute black is zero, as compared with a pure white which has a brightness of 100%.

The whites, greys and blacks which possess brilliance without hue are called "achromatic" colors to distinguish them from "chromatic" colors, which possess both hue and brilliance.

Color is looked upon in different ways by different classes of people. Thus, a chemist will consider it as resulting from the varying combination of atoms in the

molecules. The physicist will look upon color as radiant energy of various wave lengths and intensities. The biologist will consider color as a visual phenomenon or the result of the projection of images through the lenses of the eyes, causing very complicated photo-chemical and physical reactions in the eye, optic nerve and brain. The psychologist interprets color as a sensation of the mind and studies the various reactions produced by colors on that mind.

We are all familiar with the various physiological effects that color has on us all. Thus, red has an emotional appeal and may produce a temporary stimulation followed by a nervous reaction sometimes producing a headache. Blue is a serious color and has a cold intellectual appeal. Green is associated with sacred things and also tends to induce happiness and serenity. Purple is symbolic of wisdom. Yellow has a luminosity which promotes amiability. Brown is soft and gentle, while black will tend to induce sadness.

From another aspect of the same interpretation of color we shall associate red with fire and this will indicate danger. Green will suggest to us an element of tranquillity or safety, while yellow might be associated with the health and glow of sunshine. To explain these physiological and psychological effects of color upon the emotions of human beings it would be necessary to investigate the individual

components of all these colors, each of which will tend to induce a mood or a personal rate of vibration associated in some way with the vibration of that color.

There are three colors which we cannot produce by combination and which we, therefore, call the "primary" colors. These are red, blue and yellow. Any two of these colors will produce what we call the "secondary" or "binary" colors. For example, we get purple by combining red with blue; green from yellow and blue; and orange from red and yellow. The "tertiary" colors are produced using all the three primary colors. Thus, an olive shade is made by adding orange to green, and a brown shade by adding purple to orange.

In point of fact, more distinctive shades of brown than any other color known, can be blended by the expert color matcher. For this reason our stylists and the fashion psychologists responsible for developing the feminine tastes like to emphasize these shades because of their range and latitude; there are probably thousands of brown shades. Actually, there are over thirty thousand shades of all color which are distinguishable and classifiable by the average human eye. The combination of two or all three of these primary colors, in various proportions, plus black and white will theoretically produce any shade desired.

In actual practice there are no red, yellow, or blue pigments which are true spectrum colors; every pigment color available is really a combination of at least two spectrum colors. Thus, every red contains an element of blue or yellow. Every blue contains an element of red or yellow. Every yellow contains an element of red or blue.

If we wish to produce a pleasing effect with color there are certain principles which we have to bear in mind with relation to color schemes. The three fundamental principles of color relationship are those of "harmony," "contrast," and "discord."

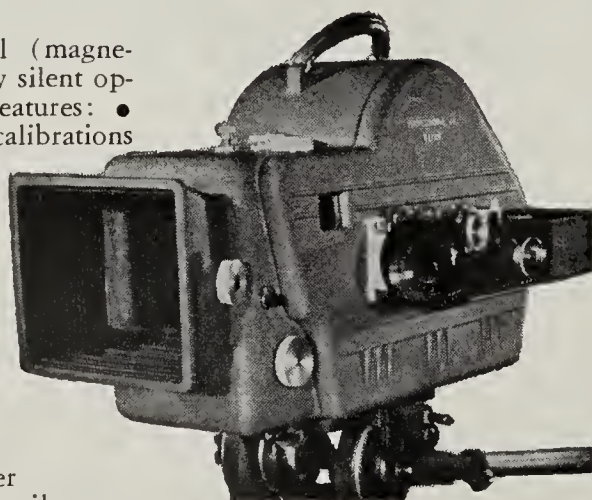
Harmony between colors is produced by using neighboring colors in their natural order. Thus, orange, orange-red and red are harmonious provided that the red selected is darker than the orange. In a similar way yellow-green, green and blue-green are harmonious. All harmonies are very pleasing, but pleasing things can be overdone. An excess of harmony like excess of sweet things tends to cloy the appetite and become sickly; therefore, harmony has to be relieved by contrast and by discord, but this harmony must still remain the basis of any color scheme. It is not desirable to introduce large quantities of the contrasting color and discord. Discord in color like the discords of music must always be a subsidiary effect.

Color contrast is a phenomenon which is deeply involved in the psychology of color effects. To prove this experimentally, we place a small slip of red paper on a large sheet of white surface. We then gaze upon this combination. Suddenly we re-

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move the red paper while permitting the eye to continue to look steadily at the place formerly occupied by the small slip of paper. We shall discover that a distinct green-blue after-image will form on the white paper. In a similar way a red after-image can be induced in the eye by means of a green-blue paper; and a blue after-image by means of a slip of orange-yellow paper.

The important point is to observe that the after-image produced is invariably the contrasting color to the original slip of paper. For this reason, we conclude that the phenomenon of contrast is something which is deeply rooted in the very nature of our color perception. It seems that there is a definite psychological need for contrast; the eye longs for it and it will attempt to induce it in itself if it is not provided with it. Thus, a color scheme may be apt to produce a restless effect if the contrast color to the dominating color of the scheme is absent.

Color discord is the result of combining colors which neither harmonize or contrast. Thus, for example, red and yellow-green; yellow and purple; blue and crimson; all these combinations are of the discordant type. Colors which are neither harmonious nor contrasting tend to interact upon one another. For instance, a patch of purple upon a blue ground will make the purple appear reddish because the background induces a yellow-orange contrast effect which superimposes itself upon the purple. When we take the same purple and place it over a red background it appears bluish because the background induces a green-blue contrast effect on to the purple. This explains why the same color will look very different when situated in different surroundings.

Equally important are tone contrasts; colors which are too different in tone will tend to kill one another. For example, dark violet upon pale yellow tends to look black—while pale yellow upon dark violet tends to look white. For this reason, when color cards are prepared the various colors are set upon a grey background. Grey is selected because it is not such a violent tone contrast as is obtained with white or with black. A colored background would be entirely unsuitable owing to the color reactions produced by processes previously referred to.

Although the actual effectiveness of any particular contrast or discord that may be introduced into a harmonious color scheme are subjects which a skilled artist is best qualified to decide, yet many of the general principles alluded to in this short survey will prevent the practical man from making any glaring mistakes or errors in color selection. If we are particularly interested in this subject we shall conduct for ourselves a visual demonstration of some of the facts about colors and the fundamental principles involved in their arrangement and selection.

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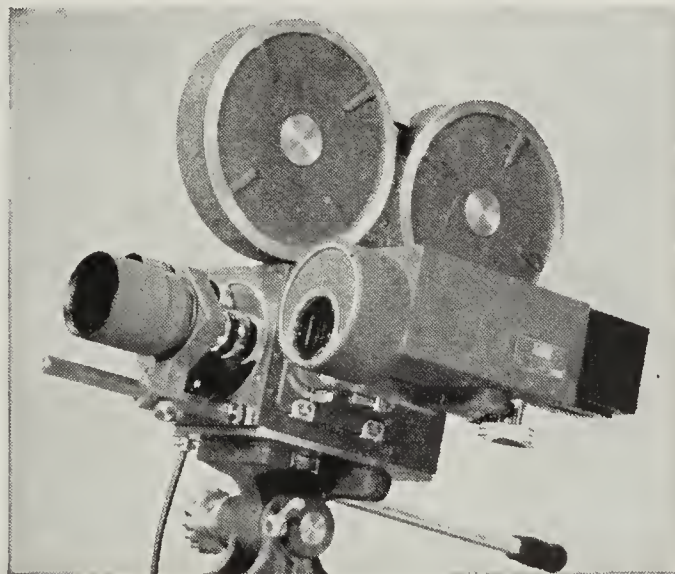
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# Current Assignments of A.S.C. Members

**M**EMBERS of the American Society of Cinematographers were engaged as Directors of Photography in the Hollywood studios during May as follows:

## Allied Artists

- Philip Tannura, "The Babe Ruth Story," with William Bendix, Claire Trevor, Charles Bickford, Sam Levene, Fred Lightner, William Frawley.

## Columbia

- Frank Redman, "Ladies of the Chorus," with Adele Jergens, Rand Brooks, Marilyn Monroe, Eddie Garr, Stephen Geray, Bill Edwards, Nan O'Bryant, Marjorie Hoshelle, Dave and Allen Barry.
- Henry Freulich, "Black Eagle," with William Bishop, Virginia Patton, James Bell, Trevar Bardette, Gordon Jones, Richard Talmadge.
- Rex Wimpy, "Singin' Spurs," with Hoosier Hot Shots, Patricia White, Kirby Grant.
- Vincent Farrar, "Gentleman From Nowhere," with Warner Baxter, Fay Baker, Wilson Graff, Luis Van Rooten, Noel Madison, Charles Lane.
- Burnett Guffey, "Undercover Man," with Glenn Ford, Nina Foch.
- Charles Lawton, jr., "Walking Hills," with Randolph Scott, Ella Raines, William Bishop, Jerome Courtland, Edgar Buchanan, John Ireland.
- Henry Freulich, "Rusty Pays a Debt," with Ted Donaldson, John Litel, Ann Doran, Gloria Henry, Stephen Dunne.

## Eagle-Lion

- John Alton, "29 Clues," with Richard Basehart, Scott Brady, Roy Roberts.

## Independent

- George Barnes, "No Minor Vices," (Enterprise) with Dana Andrews, Lilli Palmer, Louis Jordan, Norman Lloyd, Jane Wyatt.
- Winton Hoch, "The Three Godfathers," (Argosy) (Technicolor) with John Wayne, Pedro Armendariz, Harry Carey, jr., Ward Bond, Ben Johnson, Mae Marsh, Jane Darwell.
- Mack Stengler, "West of Tomorrow," with Kristine Miller, Arthur Franz, Mickey Knox, Pat Collins, Bill Murphy, Richard Jaeckel, Tom Noonan, Gene Reynolds, Ross Ford, Harry Lauter.
- Gregg Toland, "Take Three Tenses," (Goldwyn-RKO) with Teresa Wright, David Niven, Evelyn Keyes, Farley Granger, Leo G. Carroll, Jayne Meadows, Philip Friend.
- Benjamin Kline, "Trouble Preferred," with Peggy Knudson, Charles Russell, Lynne Roberts, Mary Bear.

## Metro-Goldwyn-Mayer

- Robert Planck, "The Three Musketeers," (Technicolor) with Lana Turner, Gene Kelly, Van Heflin, June Allyson, Keenan Wynn, Angela Lansbury, Vincent Price, Gig Young, Robert Coote, John Sutton.
- Hal Rosson, "Command Decision," with Clark Gable, Walter Pidgeon, Van Johnson, Brian Donlevy, Charles Bickford, John Hodiak, Edward Arnold, Clinton Sundberg, Marshall Thompson, Cameron Mitchell.
- Charles Rosher, "Words and Music," (Technicolor) with Judy Garland, Mickey Rooney, June Allyson, Vera-Ellen, Cyd Charisse, Marshall Thompson, Tom Drake, Perry Como, Ann Southern, Janet Leigh, Gene Kelly, Ann Miller, Lena Horne, Mel Torme, Dee Turnell.
- Ray June, "Sun in the Morning," (Technicolor) with Jeanette MacDonald, Lloyd Nolan, Claude Jarman, jr., Lassie.

## Monogram

- William Sickner, "The Mystery of the Golden Eye," with Roland Winters, Victor Sen Young, Mantan Moreland, Tim Ryan.
- Harry Neumann, "Saddle Serenade," with Jimmy Wakely, "Cannonball" Taylor.
- Jackson Rose, "Manhattan Folksong," with Freddie Stewart, Phil Brito, June Preisser, Noel Neill, Alan Hale, jr., Chick Chandler, Gertrude Astor.
- William Sickner, "Kidnapped," with Roddy MacDowall, Dan O'Herlihy, Sue England, Jimmy Dodd.
- Harry Neumann, "Back Trail," with Johnny Mack Brown, Raymond Hatton, Ted Adams, Pierce Lydon, Marshall Reed, Snub Pollard.

## Paramount

- Charles Lang, jr., "The Tatlock Millions," with Wanda Hendrix, John Lund, Barry Fitzgerald, Monty Woolley, Ilka Chase, Robert Stack, Dorothy Stickney, Elizabeth Patterson, Dan Tobin.
- John Seitz, "The Great Gatsby," with Alan Ladd, Betty Field, Macdonald Carey, Ruth Hussey, Barry Sullivan, Howard Da Silva, Shelley Winters, Henry Hull.
- Daniel Fapp, "Sorrowful Jones," with Bob Hope, Lucille Ball, Mary Jayne Saunders, Bruce Cabot.
- Milton Krasner, "The Accused," (Hal Wallis Prod.) with Loretta Young, Robert Cummings, Wendell Corey, Douglas Dick, Suzanne Dalbert, Sarah Allgood, Henry Travers, Mickey Knox.
- Lionel Linden, "Dark Circle," with Ray Milland, Audrey Totter, Thomas Mitchell.

## RKO

- Harry Wild, "Weep No More," with Joseph Cotten, Valli, Spring Byington, Jack Paar, Jeff Donnell.

- Robert De Grasse, "Bodyguard," with Lawrence Tierney, Priscilla Lane, Steve Brodie, June Clayworth, Elizabeth Risdon, Steve Flagg.

- J. Roy Hunt, "Indian Agent," with Tim Holt, Richard Martin, Nan Leslie, Harry Woods, Richard Powers.

## Twentieth Century-Fox

- Norbert Brodine, "Road House," with Ida Lupino, Cornel Wilde, Celeste Holm, Richard Widmark.
- Harry Jackson, "Burlesque," (Technicolor) with Betty Grable, Dan Dailey, Jack Oakie, June Havoc, Richard Arlen, James Gleason, Benita Wade.
- Charles Clarke, "That Wonderful Urge," with Tyrone Power, Gene Tierney, Reginald Gardiner, Lucille Watson.

## Universal-International

- Russell Metty, "Kiss the Blood Off My Hands," (Hecht-Norma Prod.) with Joan Fontaine, Burt Lancaster, Robert Newton, Felippa Rock, Colin Keith-Johnston, Peter Hobbes, Grizelda Hervey, Marilyn Williams, Harold Goodwin, Valerie Cardew, Alex Harford, Reginald Sheffield, Tom Dillon, Keith Hitchcock.
- Maury Gertsman, "Rogue's Regiment," with Dick Powell, Marta Toren, Vincent Price, Stephen McNally, Carol Thurston, Kenny Washington, Philip Ahn, Richard Loo, Edgar Barrier, Richard Fraser, Fred Tozere, Henry Rowland.
- Irving Glassberg, "Larceny," with John Payne, Joan Caulfield, Dan Duryea, Shelley Winters, Richard Rober, Dorothy Hart, Nicholas Joy, Percy Helton.
- Russell Metty, "You Gotta Stay Happy," (Rampart Prod.) with Joan Fontaine, James Stewart, Eddie Albert, Roland Young, Porter Hall, Halliwell Hobbes, Willard Parker, William Bakewell, Joe Cook, jr., Paul Cavanaugh, Mary Forbes.
- Arthur Edson, "The O'Flynn," with Douglas Fairbanks, jr., Helene Carter, Richard Greene, Patricia Medina, Arthur Shields, J. M. Kerrigan, Lumsden Hare.

## Warners

- Robert Burks, "A Kiss in the Dark," with Jane Wyman, David Niven, Wayne Morris, Victor Moore, Broderick Crawford.
- Ernest Haller, "My Dream Is Yours," (Curtiz Prod.) (Technicolor) with Jack Carson, Doris Day, Lee Bowman, Eve Arden, Adolphe Menjou, S. Z. Sakall, Edgar Kennedy.
- Peverell Marley, "Silver Lining," (Technicolor) with June Haver, Ray Bolger, Gordon MacRae, Charlie Ruggles, Rosemary De Camp, Lee Wilde, Lyn Wilde.
- Carl Guthrie, "Smart Money," with Zachary Scott, Virginia Mayo, Dorothy Malone, Tom D'Andrea, Douglas Kennedy, Helen Westcott.
- Carl Guthrie, "Girl From Jones Beach," with Ronald Reagan, Virginia Mayo, Dane Clark, Lois Wilson.



## 'Babe Ruth Story'

(Continued from Page 191)

of lighting produces numerous shadows, for virtual total loss of authenticity for the setting.

To provide the necessary outdoor realism in lighting, I obtained the largest and strongest arc lamps available today—the Mole Richardson "Brutes"—and lighted the entire set with these. One major problem which confronted me was necessity of obtaining a single shadow at all times, no matter where the players were. So the lights had to be placed in such a manner that each blended into the other. As each lamp had to overlap with the light from another as it hit the ground, two shadows were produced; so large black canvas mats were made for placement in front of the arcs to eliminate the overlap of light and at the same time preventing a mat shadow between the two arcs.

With the source light placed in that manner, the fill-in or reflected light had to be added. This was obtained by arc broadsides mixed in with incandescents far away from the people in the scene to prevent any secondary shadows. With the set fully lighted in this way, it made shooting both easy and fast. It might be pointed out that, at no time did I shift the source of lighting from long shots to close-ups—keeping in mind that were the same shot being shot outside, I could not move the sun around to suit my convenience.

The same documentary effect was maintained when other sets came up. For example—in a train sequence we departed from accepted procedure of breakaway sides and ceiling, and had a full train with permanent sides and fittings. And that's the way it was shot.

Keeping in mind that—were I to shoot this same train on the outside—I would have to depend entirely on the natural light source coming through the windows from the sun, and whatever reflected from that original base. So, the source light again was provided by arcs, coming from one direction only. The arcs were hung on pulleys to provide the effect of the train moving; while the reflected light was supplied by properly-placed inkies with the assistance of photofloods. Also, in some of the shots, rear projection was employed.

Of particular interest photographically

on "The Babe Ruth Story" was the necessity of obtaining closeups of the pitcher throwing the ball, and the batter whaling it out. The script and director called for realism, and it was up to us to provide the maximum for such requirements. It was decided that the best and most striking effects could be secured if the camera was set up in place of the catcher behind the home plate to record the required closeups.

But without adequate protection for the camera crew and expensive camera and lens, the hard pitched ball or foul tip could cause serious injury or camera damage to delay production. But the camera was placed directly behind home plate, and we erected a large sheet of non-breakable glass one-inch thick between the batter and camera. As a result, both camera and crew had adequate protection against oncoming balls, and thrilling and unusual shots were secured.

For longer shots from behind the plate, where the script called for inclusion of the catcher and umpire in the action with the batter; the camera was set up directly in front of the grandstand—but with a frame of stout wire to protect the camera and crew from any stray foul tips. This setup is shown in accompanying illustration.

As the studio stage naturally was not large enough for the full-sized baseball diamond, the replica of the Yankee park infield was somewhat reduced. For example, the distance between bases was cut from the regulation 90 feet to 75; while distance between the pitcher's mound and home plate was reduced to 50 feet. But the utilization of short focal length lenses, such as the 25 mm and 30 mm, provided the proper perspective to give audiences the right perspective in regards to the regulation size of the laying field.

## Pioneers of 16 MM Honored

Willard Cook, who introduced the exclusive use of acetate non-inflam film for non-theatrical purposes in the United States via sub-standard 28 mm. size; and Alexander F. Victor, who designed and manufactured one of the first 16 mm. cameras and projectors; were honored with presentation of bronze plaques at recent convention of Allied Non-Theatrical Film Association. Honors were bestowed for pioneering efforts in the non-theatrical field of safety films.

## Carter Heads ANTFA

E. E. Carter of Raleigh, N. C. was elected president of Allied Non-Theatrical Film Association for the ensuing year. Other officers elected were: Edward H. Stevens, first vice-president; Maurice T. Green, second vice-president; George H. Cole, treasurer; Jerome J. Cohen, secretary; and Harold Baumstone, J. Ken Lilley, William L. Rogers, and Alan Twyman, directors.

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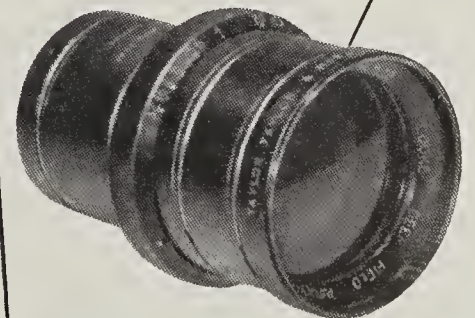
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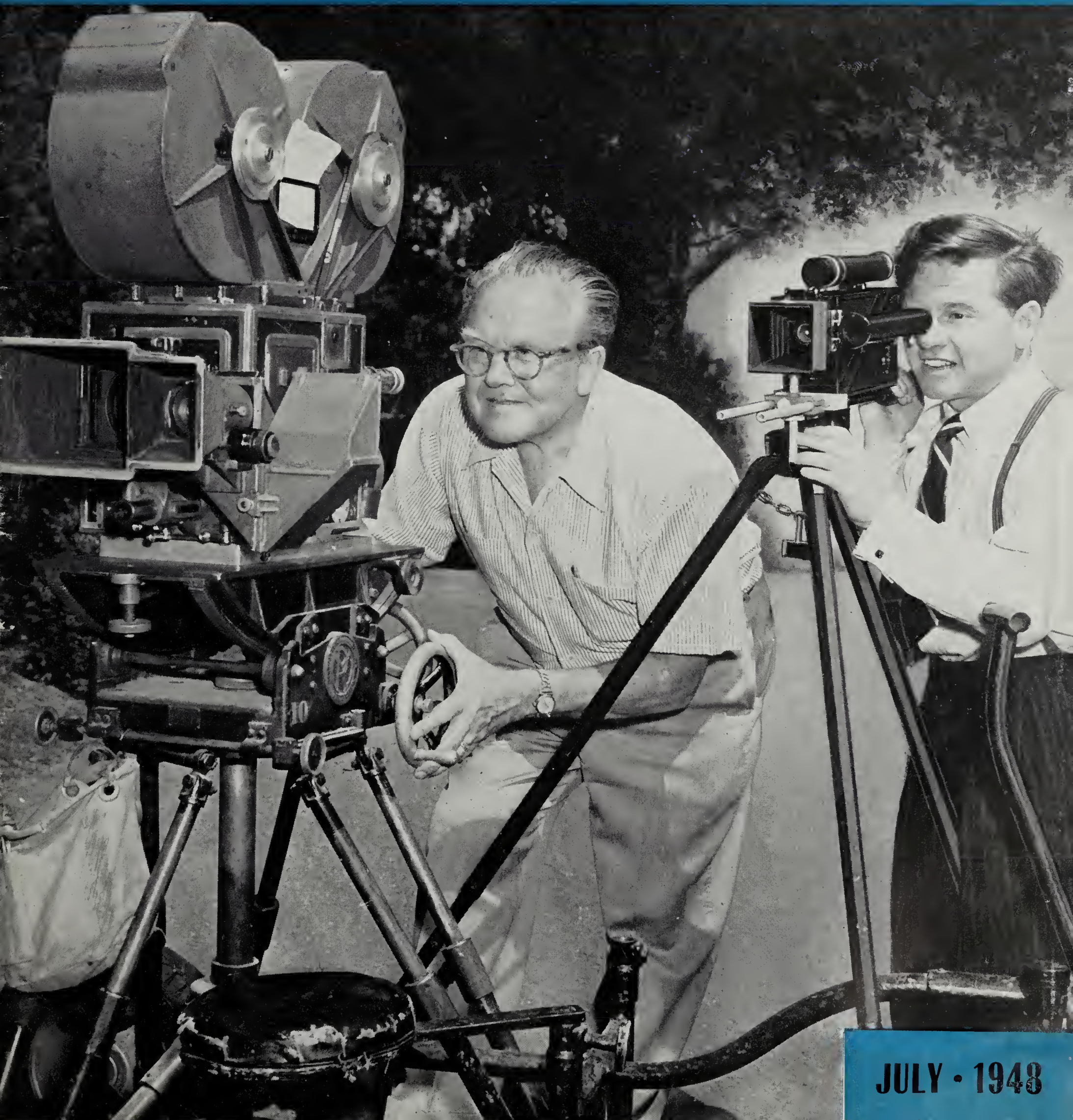


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THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY



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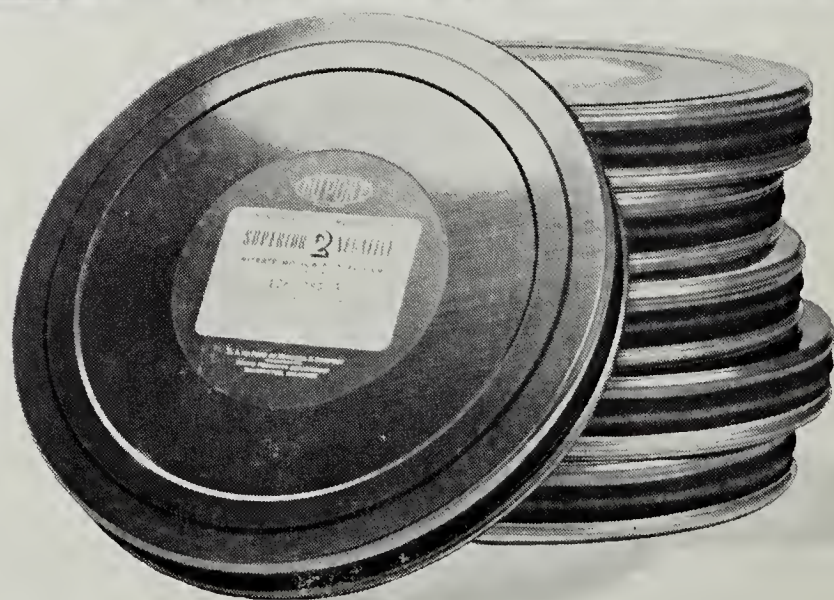




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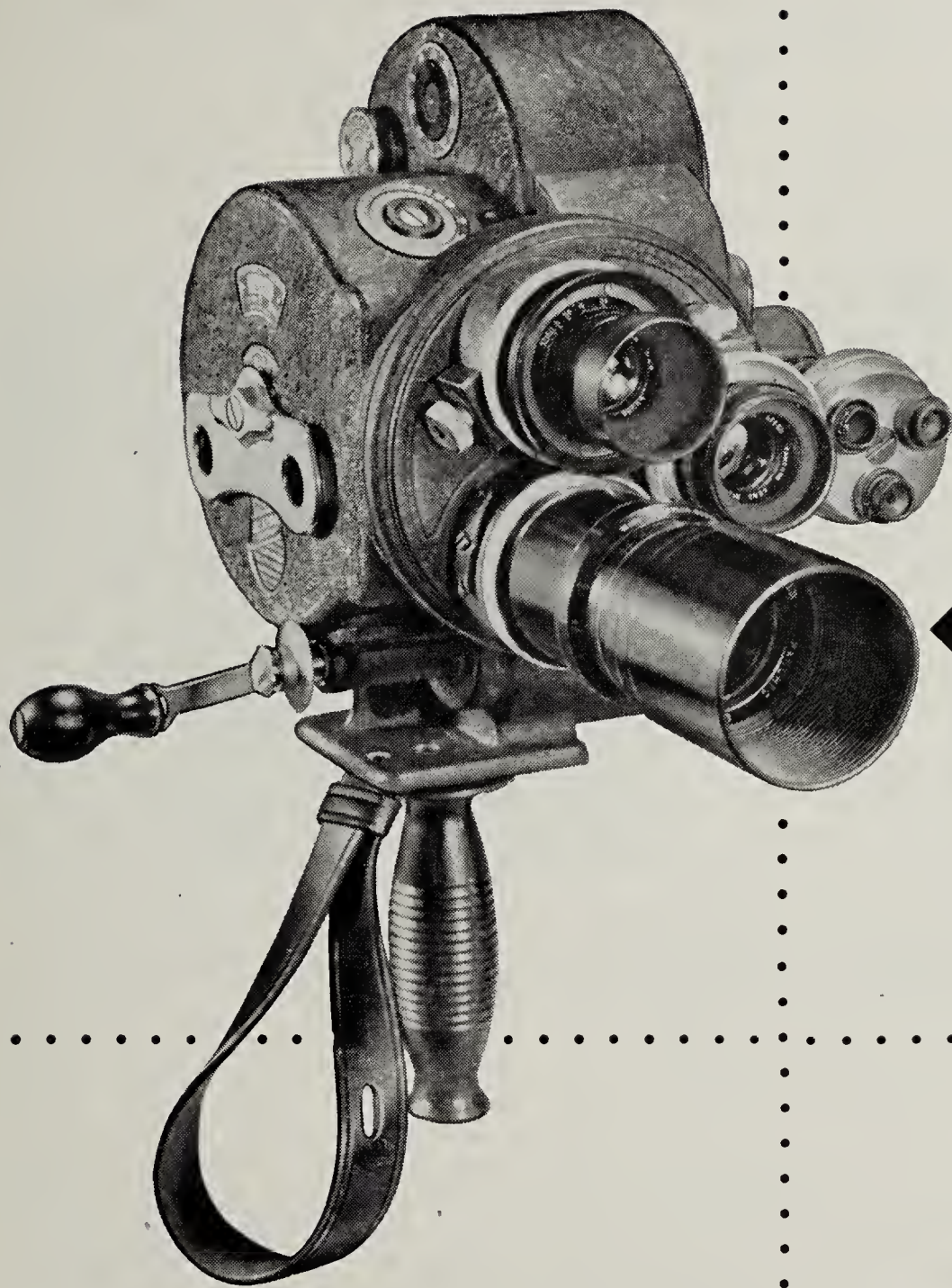
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# Hollywood

## Bulletin Board



• CECIL B. DeMILLE was honored guest of American Society of Cinematographers at Society's May 24th meeting. Event was occasion for reunion of cinematographers who had served with DeMille in early days at old Lasky studios. Pictured above (left to right) are: Hal Rosson, Rolla Flora, Pev. Marley, Lou O'Connell, Alvin Wyckoff, Mr. DeMille, Gordon Jennings, Karl Struss, and Charles Rosher. All but Jennings and Flora are ex-Lasky cameramen.

AS PART OF the motion picture industry's public relations program, the first all-industry short subject designed to acquaint the public with Hollywood operations is underway at 20th Century-Fox studios. Directed by Otto Lang, subject will deal with art directors and their work. The second subject, for which the director is yet unnamed, will deal with studio cinematography and functioning of the camera crew.

TWO REEL COMEDIES will likely be the ace-in-the-hole for Hollywood's major studios when television develops to full bloom, according to Jules White, Columbia Pictures' short subjects department head. White believes the two-reelers will be the motion picture industry's introduction to television. "The transition from movie shorts-making to the making of films for television could easily be accomplished in any major studio short subjects department," White said.

CRACKDOWN on the television film field has been launched in Hollywood by head of the local cameramen's union, it is reported, with the union announced ready to take all steps necessary to insure union cinematography on all television films. Union heads state there is possibility that producers will not get their product processed at the laboratories if filmed by non-union men. In San Francisco, unions are reported in a drive to organize all tele-photographers in the western states. Steps also were taken toward aiding Associated Press, United Press and International News Service convert their

still photographers to 16mm. cinematographers in order to cover events for video.

TWO A.S.C. members have turned film producers and are now in Sweden making a picture for early fall release. John W. Boyle, A.S.C., and Edgar Bergen who is an associate member and a skilled photographer as well as a radio and screen star, sailed June 1st for Gothenburg. Story being filmed, which is aimed at the television market as well as theatre screen, has to do with experiences of Bergen, Charlie McCarthy and Mortimer Snerd on a trans-Atlantic voyage and the reception given them in the land of *skaal*.

CHARLES ROSHER, A.S.C., heads a committee that includes John Boyle, Arthur Edson, Sol Halperin, Fred Jackman, and Karl Struss, all A.S.C. members, which is preparing plans to establish an experimental photographic workshop in basement of the A.S.C. clubhouse. Facilities will be for exclusive use of members of the Society interested in meeting and working together on photographic problems, both still and cinema. Workshop will afford cinematographers opportunity to test new films, lighting equipment, lenses and other cinematic apparatus and will eventually include a shooting stage complete with lighting facilities as well as film developing equipment.

JERRY FAIRBANKS enabled NBC to scoop the theatre newsreels with televised pictures of recent Oregon flood, by dispatching a 16mm. cameraman to the  
(Continued on page 247)



... where credit  
is due.

AMONG the millions of theatregoers who see entertainment motion pictures daily, only a relatively few have any conception of the important part played by the directors of photography in the pictures' success. When moved to tears or suspense by a particular scene or bit of action, few cinemagoers realize that it was because carefully planned photography combined with the players' performances to produce the realism that moved their emotions.

Members of the A.S.C. are constantly striving for new and more realistic effects in their photography, yet their efforts and the scope of their art are little understood by those outside the circle of the profession. When not actually on a picture assignment, many pursue photographic experiments or study which invariably materializes in distinct photographic contributions marking a successful new picture.

The A.S.C. currently is engaged in making these facts known to the public at large through a carefully planned public relations program that will carry the revealing story of Hollywood's cinematographers to America's theatregoers.

That American cinematographers and A.S.C. members in particular have contributed much to the success of Hollywood pictures, for which they receive all too little credit, goes without saying. A.S.C.'s new public relations program should remedy this.



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THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

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JULY • 1948

NO. 7

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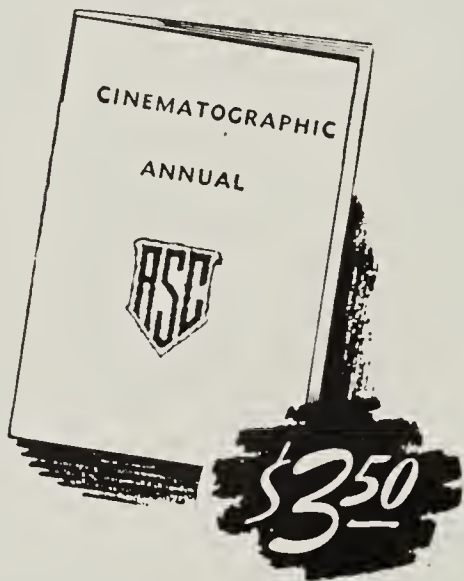
### ON THE COVER

LATEST recruit to ranks of 16mm. movie makers is Mickey Rooney who filmed some of the action in "Words and Music," his current picture, under tutelage of Charles Rosher, A.S.C., who is photographing the production in Technicolor for M-G-M. Rosher, who took up photography as a hobby over thirty years ago, has been a regular 16mm. enthusiast for past twenty years, devotes much of his time helping others get started in hobby of amateur movie making. He is considered one of the best Technicolor photographers in the profession today.

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBSCRIPTIONS: United States and Pan-American Union, \$2.50 per year; Canada, \$2.75 per year; Foreign, \$3.50. Single copies, 25 cents; back numbers, 30 cents; foreign single copies, 35 cents; back numbers, 40 cents. Advertising rates on application. Copyright 1948 by A. S. C. Agency, Inc. AUSTRALIAN REPRESENTATIVE: McGill's, 179 Elizabeth St., Melbourne.



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Optical Science of Cinematography; Composition in Motion Pictures, by Dan Clark, A.S.C.; Painting With Light, by Victor Milnor, A.S.C.; Light Filters in Cinematography, by Ned Van Buren, A.S.C.; Art in Makeup, by Max Factor; Motion Picture Studio Lighting; Sound Recording; Micro-Cinematographic Apparatus; Useful Facts and Formulae—these are but a few of the subjects covered in this book, written by the highest paid technical talent in the motion picture industry.

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## Keeping up with

# PHOTOGRAPHY

★ ★

## “Seeing Eye” Spotlight

Recently, a new spotlight, which is destined to have a profound influence on the technique of lighting movement on motion picture sets and exteriors, was demonstrated for the first time at the Marylebone Studios, London, England. Conrad Bache, a Swiss inventor has applied the principles of Radar in producing a mechanism which synchronizes the beam of a spotlight with the lateral or vertical movement of a player or object. It works as follows: The player wears an infra-red button (a piece of crystal covered with a red filter), anywhere he likes, provided that it is within the spotlight's arc of light. The infra-red button reflects the beam back to a number of lenses, which in turn set a special motor (called a servo-motor) beneath it in action. The servo-motor is wired to the spotlight—thus completing the circuit.

Should the script call for shots of the player, back and front, a second button on his back is the solution.

Naturally the button being infra-red, will not show on the negative. The effective range of the present working model is 100 yards. Within that range, the spotlight will hold a car moving at 60 m.p.h. evenly lighted throughout. At present, no more than three players can be lighted at one time by the one spotlight. But, according to the inventor, there are no obstacles to extending the range in depth or width.

The servo-motor can serve a dual role. It can be connected with the camera in order to provide (a) automatic focusing; (b) automatic control of the camera and dolly in a panning shot. The servo-motor (at present rather noisy) is to be improved and rendered soundless.

Bache pointed out that efficiency of the spotlight will not be diminished even by the presence of cross-beamed lighting.

## Report On Light

Studies of the surface scattering of light occurring at optical boundary surfaces and a new method of measuring surface scattering are reported in a monograph now on sale by the Office of Technical Services, Department of Commerce. The monograph, in English, was prepared by Dr. Paul Keck, former head of a laboratory of the Carl Zeiss optical firm at Jena, Germany, under the auspices of the U. S. Office of Military Government in Germany.

The surface scattering of light at optical boundary surfaces is significant, Dr.

Keck explains, because it affects the performance of lens systems, mirrors, optical flats, telescopes, and the like. The presence of scattered light signifies an interference pattern, he states. This involves a loss of light and superimposed scattered light which may occur either in the image plane or within the field of view. Under certain conditions scattered light can prevent the observance of certain structural details of an object. With a well polished surface glass the amount of scattered light compared with the entire incident light is small.

Dr. Keck, in the report, reviews all available literature on the subject and examines current methods of measuring scattered light. Complete geometric-optic relations with respect to scattering are given. A new and extremely sensitive instrument, for measuring scattered light and its applications for optical flats, lens systems, telescopes, and mirrors are described. A new standard is suggested for the exact measuring of glass polish. Twenty three diagrams and several tables of data are appended.

Mimeographed copies of report (PB-75896, *Methods of measuring scattered light at optical boundary surfaces*. 62 pages, May 1947) sell for \$1.75. Order from the Office of Technical Services, Department of Commerce, Washington 25, D. C.

## Films For Television

Horse race films taken at Delaware Park by track stewards for use in catching fouls and rough riding have been turned into exciting commercial television trailers. The track is using 16mm. films taken during the running of last year's "Polly Drummond Handicap" with a background voice telling about this season's coming events.

The entertainment value of this type commercial is so strong that television officials look for auto race promoters, baseball, football and basketball teams, circuses, etc., to follow the format. The track has signed for six such announcements and one ten minute film period on WCAU's television station in Philadelphia.

## Waiting List

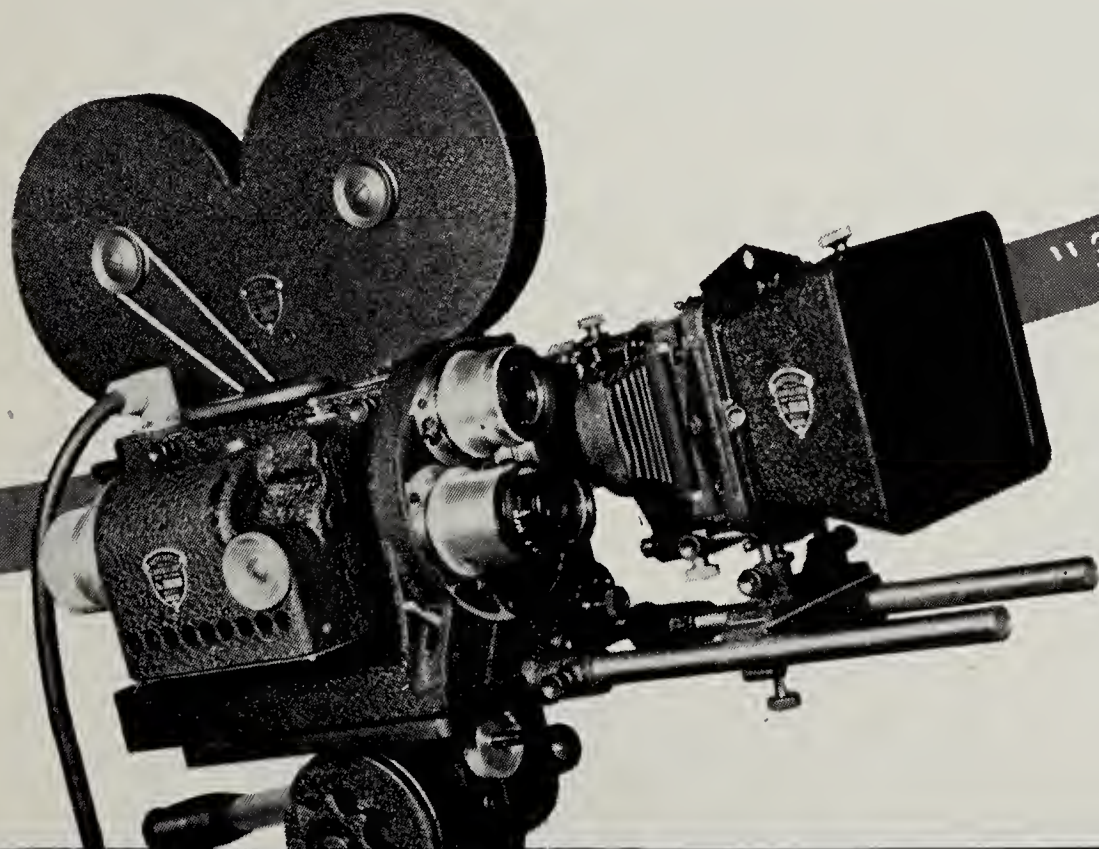
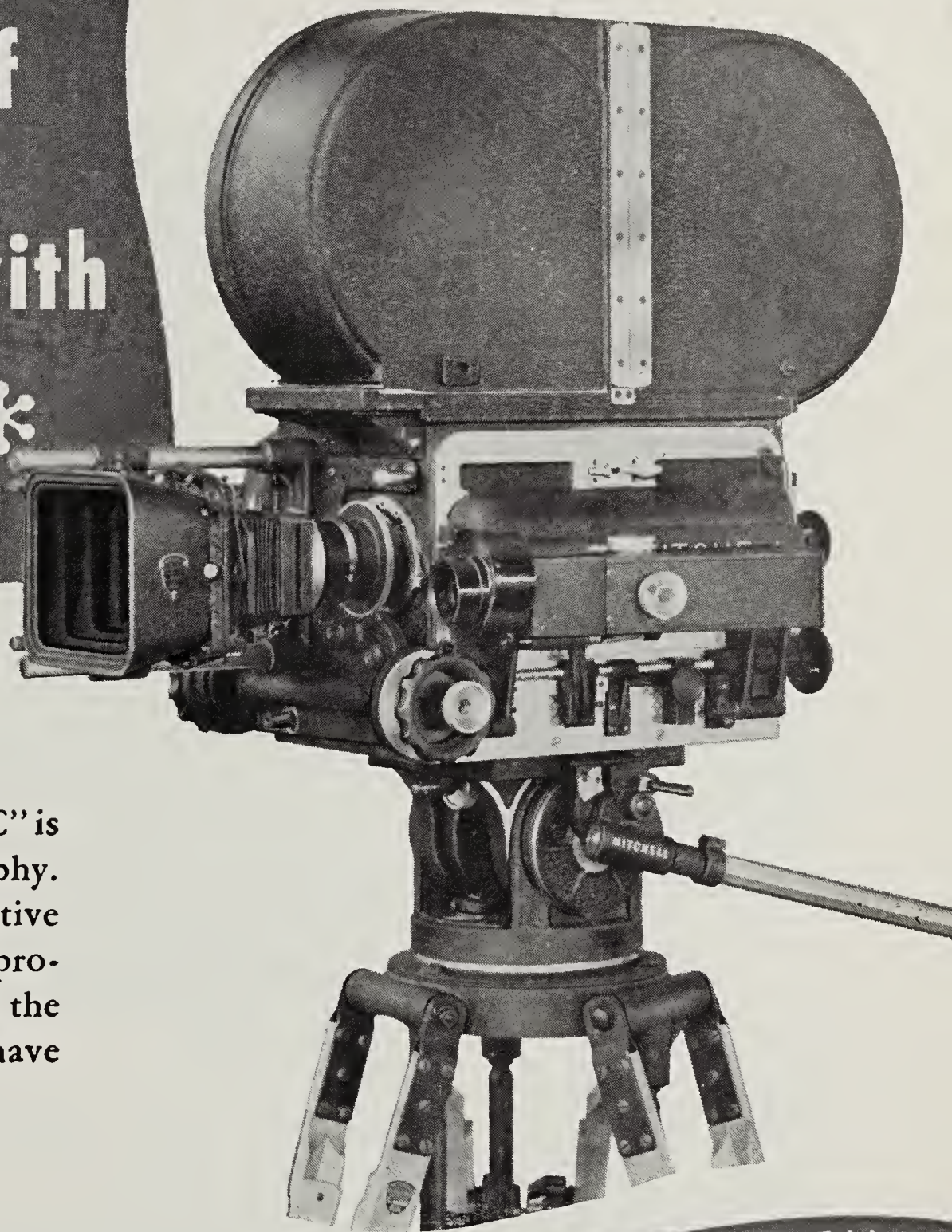
Several thousand people wishing to enter the British film industry are now on the lists of that country's Apprenticeship and Training Council and although the planners have estimated that 2,000 fully

(Continued on page 253)



# The great films of Today are shot with a *Mitchell* \*

The MITCHELL STUDIO MODEL "BNC" is a truly silent camera for sound photography. No blimp is required. Its smooth, positive operation saves many costly hours of production time. Since the introduction of the "BNC," more and more major studios have made it standard equipment.



"35 mm QUALITY ON 16 mm FILM"

The MITCHELL "16" is enthusiastically acclaimed by leading commercial producers as the first professional camera to bring theatre-like quality to the 16mm screen. Typically MITCHELL in design and workmanship, it contains the same proven features that made MITCHELL cameras famous throughout the world.

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85% of the motion pictures shown in theatres throughout the world are filmed with a Mitchell





## *Immediate Delivery* Maurer 16-mm Professional Motion Picture Camera

Thanks to increased manufacturing facilities and improved deliveries of materials, orders for the new Maurer Camera can now be filled promptly.

Price of **\$3650\*** includes —

- Camera
- Parallax-correcting View Finder
- One 400-foot, gear-driven Magazine
- Choice of Motor
  - 110 volt, 60 cycle, single-phase synchronous
  - or 12 volt, D. C., governor-controlled
- Sunshade Filter Holder
- Carrying Case

Camera turret takes lenses in standard C-mounts

\*Not subject to excise tax

*Will you be satisfied with less than —*

The Maurer clear glass viewing system, with which you see a clean, bright image directly through the taking lens, exactly as it will appear on the film.

The Maurer high-power (140x magnification) focusing system, which insures critical sharpness in every picture.

An intermittent movement specifically designed for 16-mm film, assuring rock-steady images regardless of film shrinkage or inaccuracy of perforations.

The Maurer view finder, giving largest, clearest image, with brilliant illumination to extreme edges of finder field, corresponding to the fields of all lenses.

An automatic dissolving shutter, with maximum opening of  $235^\circ$ , that permits shooting with one-third less light.

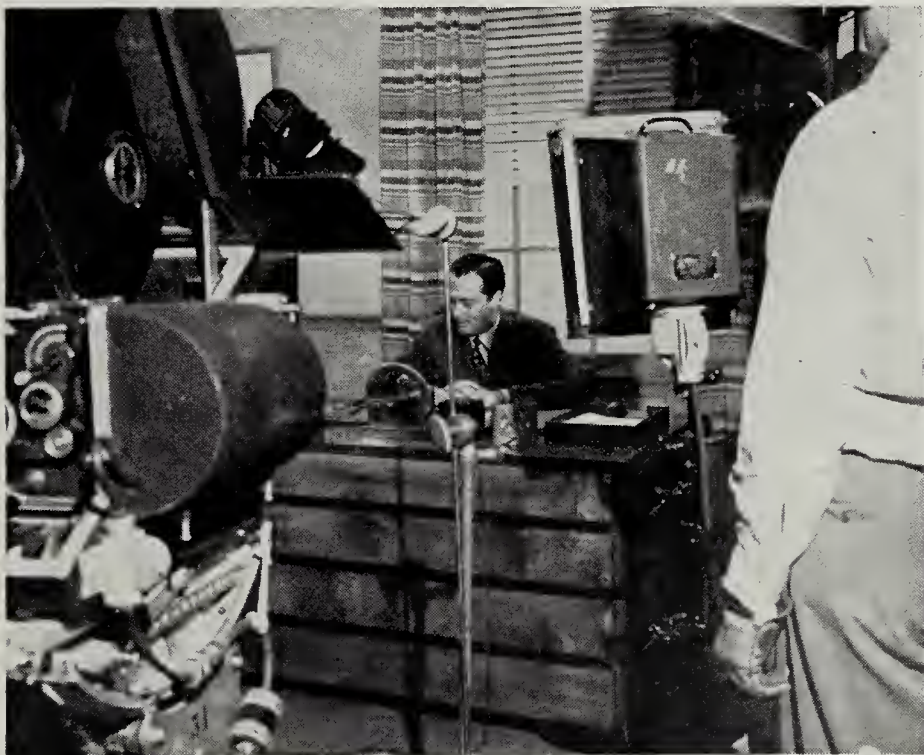
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Professional Motion Picture Cameras and  
Recording Equipment for the Production of  
Industrial, Educational and Training Films





• **IN FILMING** for television, the camera must be carefully centered on the players and action because of the curvature of the television receiving tube. Any action at edge of picture is likely to be blurred.



• **CLOSE GROUPING** of actors is a must because of the limited size of television screens. If large, sharp images and facial reactions are to be received, players must remain closely grouped.

# PHOTOGRAPHY FOR TELEVISION

**Jerry Fairbanks, one of the first to explore use of films for television, tells of restrictions video's limited screen holds for the cameramen entering this new field.**

By FREDERICK FOSTER

**R**EMEMBER how it was back in 1927 when "talkies" changed the whole course of motion picture production, upsetting camera techniques that had been in practice for so long? Something like that is about to take place again, for now it is television that is coming of age—a medium of mass entertainment in which motion pictures are destined to play a dominant part.

Not that television will change all cinematography practice—only that which applies to motion pictures made for telecasting. In the comparatively brief time that television has been with us, it has enabled its production experts to evaluate its needs and shortcomings and to arrive at this decision: the most satisfactory and successful television programs will be those produced on film.

As a result, almost every major motion picture studio is laying plans to either set up a separate television film produc-



• **THE CAMERAMAN** moves in for a closeup in one of the 'Public Prosecutor' video films made by Jerry Fairbanks (right) for NBC, which employed many new techniques developed in three years of research.

tion unit, or edit versions of feature and short subjects footage especially for video programs. Studio short subjects departments are particularly adapted to this type of program production, as has already been proved by Jerry Fairbanks Studios, which produces most of Paramount's short subjects, and which has contracted with NBC to make all of its television program films, including two newsreel series.

With perhaps more actual experience in this new field than any other major picture producer, Fairbanks becomes an authori-

*(Continued on page 248)*

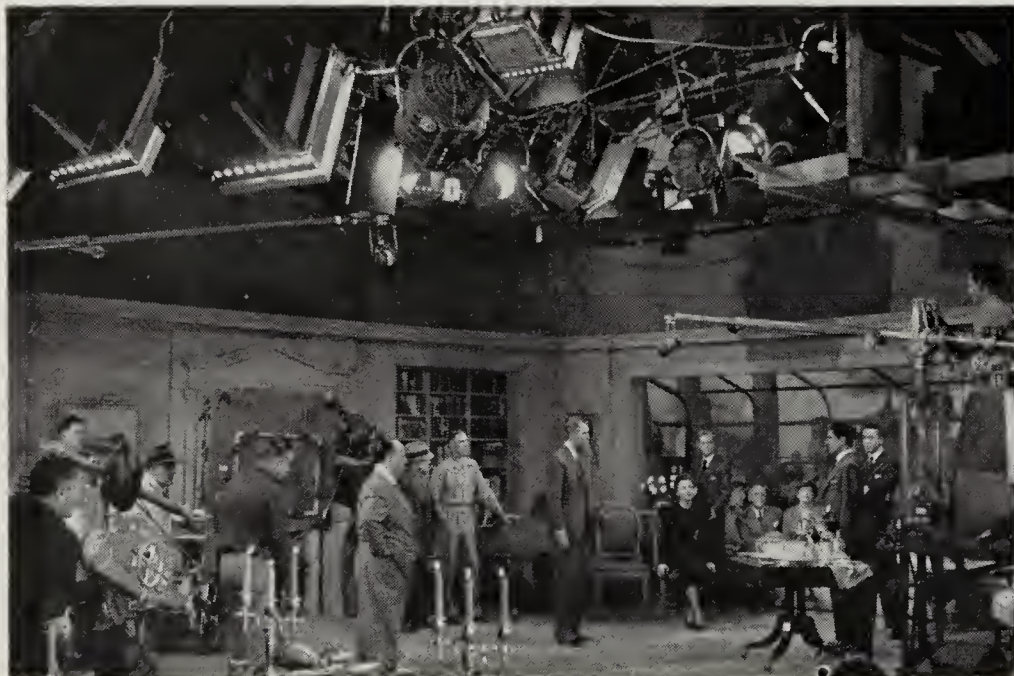




• BEFORE shooting began on "Rope," director Hitchcock called his production staff and some of the cast together to chart the action and photography. Hitchcock outlined the action on a model of the set while Joe Valentine, A.S.C., diagrammed camera movements on blackboard.



• HITCHCOCK'S new technique called for shooting the action continuously without any breaks for closeups or long shots. Thus it was necessary to call the cast together for round table rehearsals prior to starting each 925 foot take.



• THE CAMERA had to move about freely on the set, changing position frequently, moving in for a closeup shot, then dollying back. This made it necessary to clear the stage of lights and to mount all illumination units overhead, the same as is done in lighting television sets.



• WALLS of the set were hung from overhead tracks so they could be moved to allow camera to follow the actors through narrow doors, then be replaced quickly. Here director of photography Joe Valentine rehearses route camera will take before commencing to shoot scene.

# 'Rope' Sets A Precedent

Each take averaged 925 feet in length in this newest of Alfred Hitchcock productions photographed on a single set.

By VIRGINIA YATES

NOT UNTIL September will you have an opportunity to see *Rope*, a picture demonstrating a unique and successful departure from the familiar technique of filming motion pictures. This Technicolor production, photographed by Joe

Valentine, A.S.C., is the culmination of years of careful planning by director Alfred Hitchcock.

Actually, planning of the picture began back in 1946. The locale was London. And the subject under discussion by

Hitchcock and British theatre owner, Sidney L. Bernstein was 'how to make movies.'

"Why not film plays while they are enacted on the stage," said Mr. Bernstein, "if not for commercial use, at least for research. Think what it would mean if we could sit in a projection room today and see Booth, Salvini and Sarah Bernhardt portraying their most famous stage roles."

"There is one play that would lend itself to such treatment," said Hitchcock. "It's Patrick Hamilton's play 'Rope's End'."

"You mean shoot a performance of it right on the stage?" asked Bernstein.

"No. Shoot the play as it is enacted on a sound stage. Shoot the action continuously, stopping only when the film is used up in each reel."



Excitedly Hitchcock outlined the idea and convinced Bernstein that this play was the perfect vehicle for the experiment. The perfect initial production for their newly formed company Transatlantic Pictures. Actually the idea had been one of Hitchcock's pet dreams for a long time. But he had needed a story that had no time lapses, and a story that took place on one set. *Rope's End* which will be released by Warner Bros. in September under the title *Rope* was the perfect choice.

It was also Hitchcock's idea to do the picture in Technicolor. "Because," as he explained, "I've waited 17 years to find a story of my type in which color plays a dramatic role. In *Rope* color will denote the change in time of day from sunset to darkness which is of vital dramatic importance in the story."

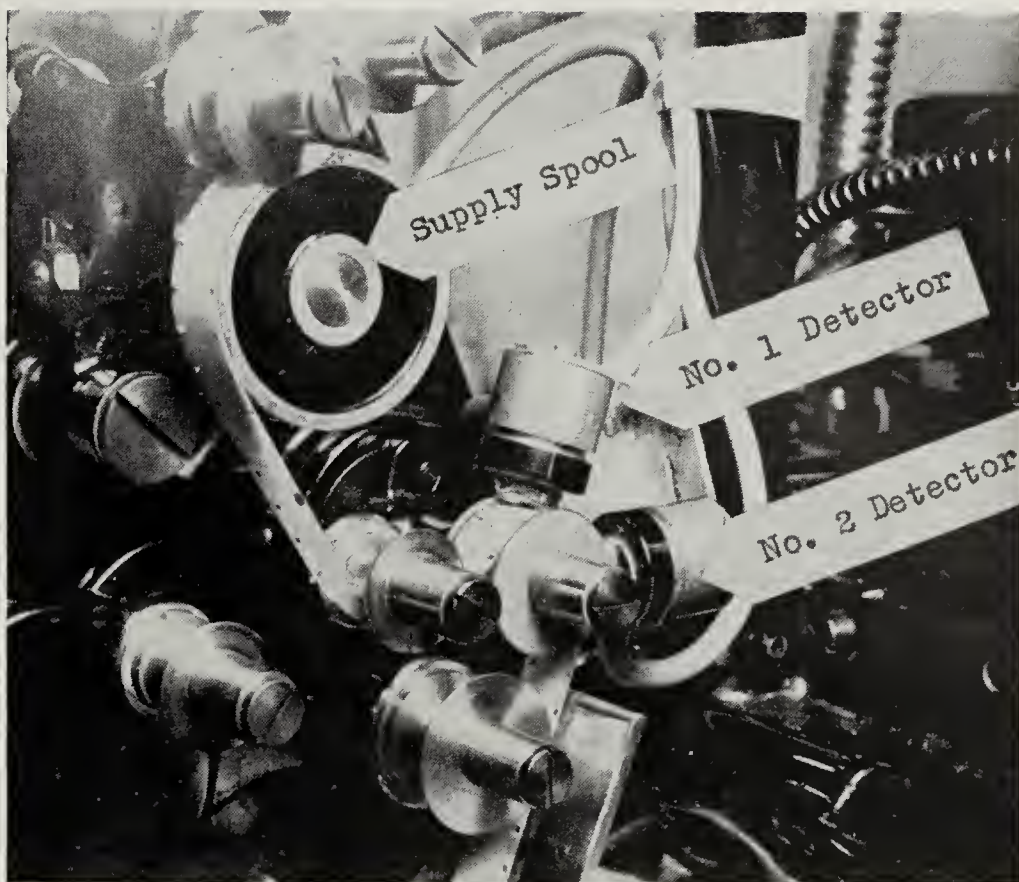
Thus began a project that may prove to be as revolutionary in the technique of filming motion pictures as the introduction of the close-up, the camera boom and sound.

On Warner's sound stage No. 12 a special floor was first built. It was raised four inches above the permanent floor and lined with felt. It was built absolutely level and rigid enough to carry the ponderous 685 pound Technicolor camera and boom without creaking or sagging. On this floor was constructed the one set for the film. It was a penthouse apartment consisting of a kitchen, dining room, hall, and living room. All of the walls were hung from overhead tracks so they could be moved manually to allow the camera to follow the actors through narrow doors, then be replaced quickly when necessary. It featured a large window and looked out over the New York skyline.

*(Continued on page 246)*



• TO INSURE that camera dolly, riding free of any tracks, would be returned to its proper position for each angle during the long takes, numbered circles, indicated by arrow, were tacked on floor of the set.



• APPLICATION to 16mm. printer of new cueing device is shown here. Two magnetic detectors scan both edges of film. When spot of metallic paint passes either detector, signal is relayed to mechanism to cause a light change or produce fades, dissolves or other special cinematic effects.

## MAGNETIC CUEING

**Dabs of metallic paint applied to edge of film supplant notching as means of cueing originals for printing.**

By JAMES LARSON

FOR MANY years, all motion picture film printers have used cueing devices that require cutting notches in the edge of original films to be printed. There are many disadvantages to this method of cueing, especially with 16mm. films.

First, the notches are permanent. When changes are made in the printing procedure requiring a new cueing pattern, some of the old notches must be eliminated by filling them in by a very tedious process of patching up the film. Then a new notch pattern must be cut.

Also, it is generally accepted that the notching process has a tendency to weaken the film and make it more subject to accidental damage in the printer. Furthermore, it is invariably possible to make a greater number of duplicates from a film that has not been notch-cued from one that has.

The third disadvantage of notch-cueing, of course, is the fact that, in some printing machines a very definite sideways jump of the film occurs when the notch passes the printing aperture, caused by the pressure guide plate bearing against the opposite edge of the film. Thus, when the notch passes this guide plate, the film moves sideways causing the picture to appear to jump sideways on the screen.

There are probably other important disadvantages to edge-notching films, but those described above were sufficient to motivate development of a new method of cueing films by Academy Films, producers of 16mm. educational motion pictures in Hollywood. Under direction of the author, a new magnetic cueing device has been developed that eliminates cutting notches in the film. Instead of notching, this new system requires only the application of a small dot of magnetic paint

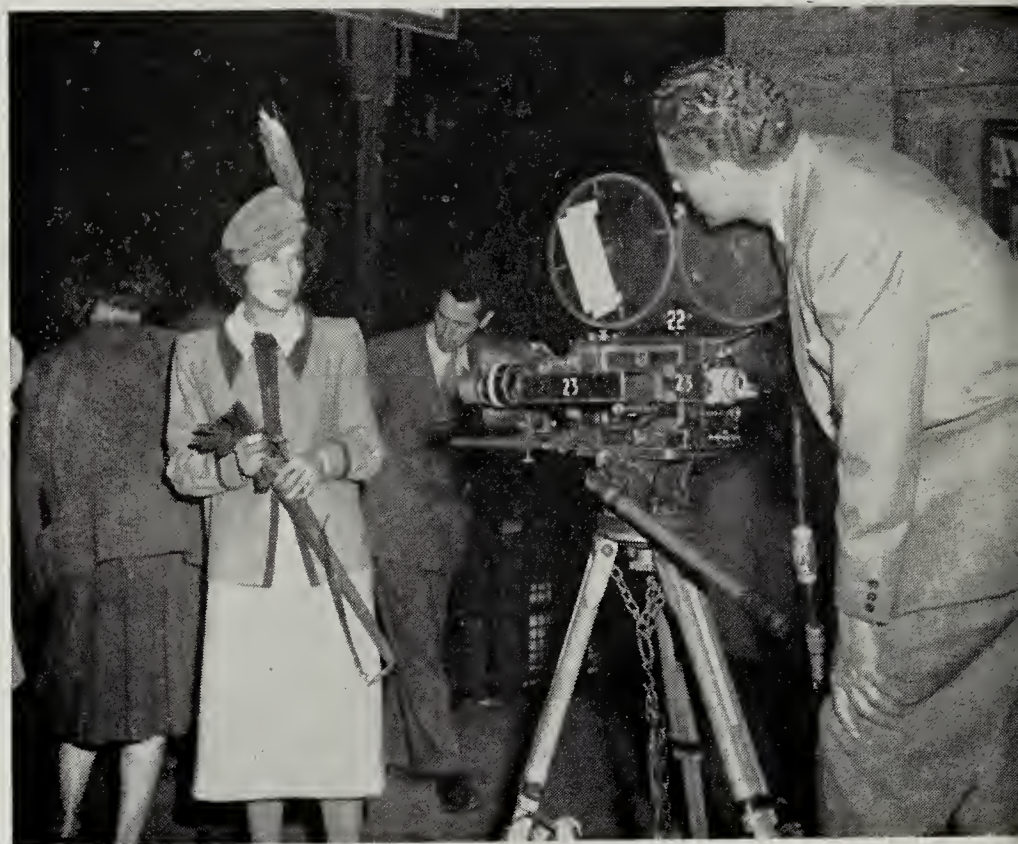
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• TYPICAL of many of the lighting problems encountered by Lucien Ballard in photographing 'Berlin Express' is that involved in this setting of a bomb-shattered brewery where extreme depth of focus was a prerequisite.

• DIRECTOR of photography, Ballard, discusses a camera angle with Mrs. Ballard (Merle Oberon) on location in a Paris railroad station. Wide angle lenses were invariably employed when shooting in such crowded locales and were responsible for some highly dramatic compositions.



## The story of filming

# 'BERLIN EXPRESS'

By HERB A. LIGHTMAN

**M**ANY DIRECTORS of photography attempting the documentary approach in shooting photoplays today endeavor to "hold a mirror up to Nature," with the invariable result that their photography often has a disturbing harsh quality. Cinematic purists inevitably laud this lack of refinement as "Art," maintaining that the unvarnished simplicity of the thing is what makes it go. Actually, a great deal of just plain poor photography has thus gotten by under the guise of documentary realism, but directors of photography in Hollywood are proving that realism and studio finish can be successfully combined.

Lucien Ballard, A.S.C., succeeds brilliantly in polishing the mirror which he holds up to Nature in "Berlin Express." Even the studio-staged sequences have a convincing realism, and the location footage has the finish and high quality which American audiences have come to expect

in top Hollywood studio productions. The blending of the two styles created a perfect medium for the telling of a story with a factual background.

"Berlin Express" is the story of a girl and four men of assorted nationalities, all of whom are travelling separately to Berlin on the train from which the film takes its name, and who become involved in the murder of a German peacemaker while en route. Upon arriving in Frankfurt they are informed that the murdered man had been concealing his identity to protect the real diplomat, whereupon said diplomat is promptly kidnapped and the chase begins in earnest.

The story provides a substantial framework for the forceful direction of Jacques Tourneur and the masterful camerawork of Lucien Ballard, A.S.C. Critics and audiences alike are sure to compare Tourneur's deft directorial style to that of Alfred Hitchcock at his best. Director of

photography Ballard's camera is perfectly attuned to the suspenseful mood and pace of the action, and he deserves special praise for infusing his location photography with the quality and polish typical of the finest studio production camerawork.

"Berlin Express" opens with a montage of scenes in and around Paris which gives the film something of a "March of Time" atmosphere. The narrator sets the stage as the camera picks up views of Notre Dame, the Eiffel Tower, the Trocadero, the Sacre Coeur Cathedral and the twisting streets of Montmartre. In the latter location, some children shoot a pigeon and discover that it has a code message strapped to its leg. When the message is taken to the police the plot begins to congeal and the story moves rapidly from situation to situation.

In order to photograph sequences in Paris, Frankfurt and Berlin, RKO Radio sent a crew and cast of 27 people to Europe for a period of seven weeks. They took along approximately 100,000 feet of film, which incidentally created a continuous storage problem. In each city they had to locate a suitable place for it, such as a cellar or a vacant office in an army-occupied building, but in a bombed-out city storage space is obviously at a premium.

The second major problem concerned the processing of the film. Laboratory con-



ditions in Europe were uncertain to say the least, and it would have been impractical to try to maintain precise standards on control under such conditions. There was no alternative but to fly all exposed footage to the United States for processing, and although periodic laboratory reports were sent out, the troupe saw none of the scenes until it returned to Hollywood.

Standard photographic equipment on the overseas jaunt included Mitchell cameras equipped with wide-angle lenses, which proved valuable in filming the crowded location sets and also permitted the cinematographer to achieve some unusually dramatic compositions. On one occasion, in order to photograph an actual black market raid in Germany, the cameramen were dressed in police uniforms and accompanied the Military Police, shooting the entire sequence with hand-held Eyemos. For scenes filmed in Paris the crew used a standard two-magazine DeBrie sound camera.

Motion picture equipment is very scarce abroad and it was indeed difficult to find any that could be borrowed or rented. For this reason, everything that would be needed had to be brought from Hollywood. The company was fortunate, however, in that it located the only available camera car in France, and was able to arrange to use it for the entire seven weeks on location. Extra technicians were hired in France and Germany, the movie industries in both countries providing the necessary skilled men.

"Berlin Express" succeeds in projecting an atmosphere of desolation underscored with shifting currents of intrigue, drama and reawakened hope. This effect is the result of a combination of skillful direction, lighting and camera angles. The

## Despite equipment shortages and other handicaps, Lucien Ballard, A.S.C., has accomplished some startlingly realistic photography in this monochrome production for R. K. O.

piles of rubble which form the backgrounds for much of the action might have appeared incoherent and undramatic had they been photographed by a less skillful cinematographer. Four years of rain, sun and wind had faded the piles of debris to a colorless mass, and it required exacting cross-lighting to faithfully put across the drama of the terrifying devastation. In panning past the ruins, under certain lighting conditions, the black gaping holes appeared to be merely darkened windows, and it was difficult to capture on film the magnitude of destruction and the desolation of the buildings. On the recommendation of cinematographer Ballard, the shooting schedule was revised to take full advantage of cross-lighting by the sun. The resulting scenes are starkly dramatic with a depth and dimension that makes the lonely wreckage stand out in strong relief.

Much of the action of the picture takes place at night, and these sequences are among the most realistic and impressive in the picture. With one exception, all of the night shots in the film are actually heavily filtered day shots. For lighting in these sequences the camera crew relied principally upon the sun and fill-in reflectors, although a few flood lights were brought along from America for this purpose. It was impossible to get enough electrical equipment in either France or Germany to shoot actual night scenes. The evening scene outside the Gare de L'Est in Paris was the only one actually filmed

at night. Producer Bert Granet had to borrow every generator in Paris to do it, but still the scene was underlit.

In viewing the film, even the experienced technician may get the impression that the entire picture was photographed in the actual locale. There is a consistent quality in the photography throughout, a careful matching of interiors with exteriors, of lighting contrasts, and process backgrounds with actual scenes. The remarkable consistency of the process backgrounds is due chiefly to the foresight of Ballard who insisted that process cameraman Harry Perry go along on the European trip. On location, after Ballard had completed shooting a master scene, the process cameraman would then set up in the same place and shoot the same background with identical lighting. Thus, the common production problem of backgrounds that are out of key with the general photography was completely solved. The process shots in "Berlin Express" are so well-executed that it is difficult even for the experienced eye to identify them as such.

While the photography throughout the film is uniformly excellent, there are several effects which stand out as being extraordinarily good. In one sequence a character who has just been shot staggers through a crowd of people and pitches forward toward the lens of the camera. The screen goes black for some seconds and then, as the man is lifted up by his

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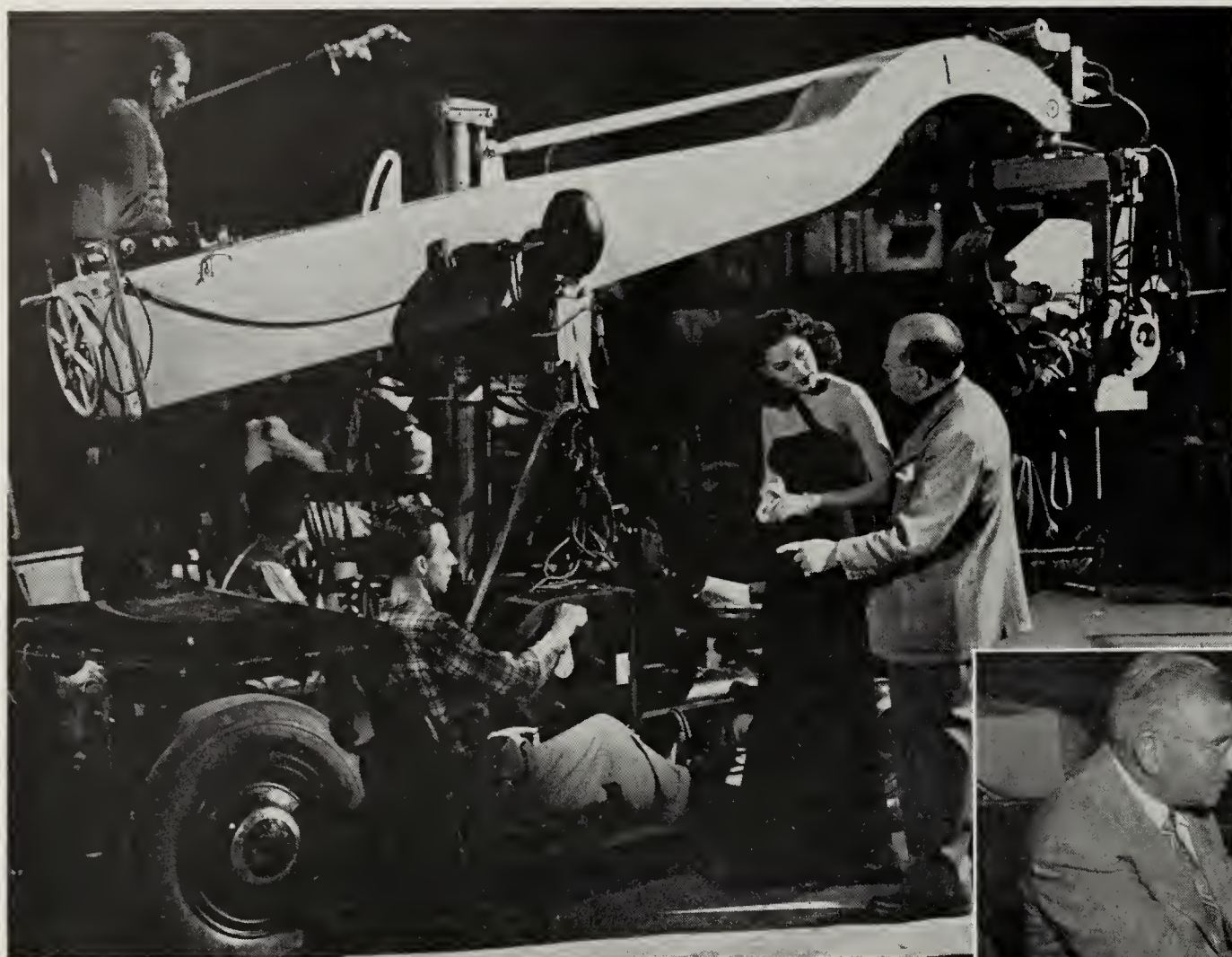


• OUTSIDE the bomb-ruined Reichstag in Berlin, the cast and crew of 'Berlin Express' prepare to shoot a scene. The troupe, numbering 27 players and technicians, spent seven weeks in Europe.



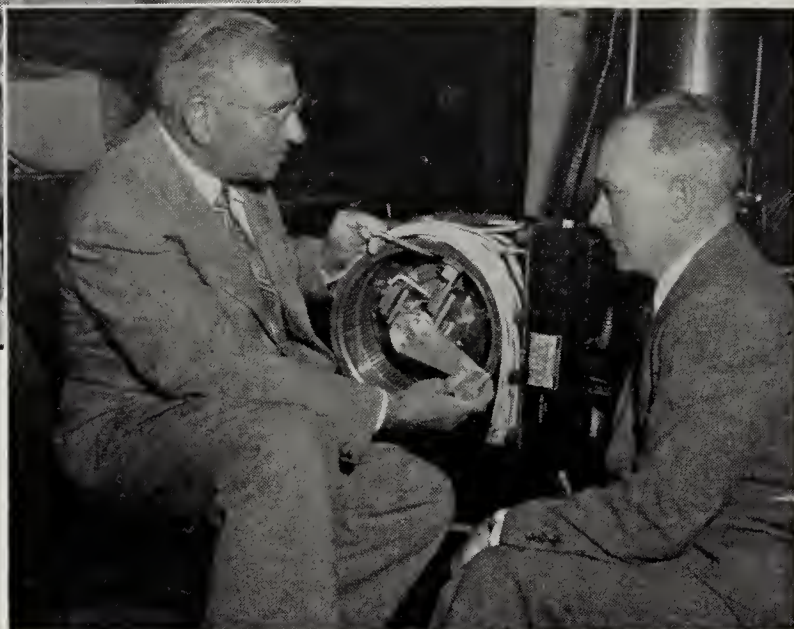
• DOLLY tracks are laid in the crooked streets of Montmartre while director Jacques Tourneur, at right in foreground, plans his next shot. Citizens proved only mildly interested in the proceedings.





• FIRST "RO" boom to be improved with Arnold's invention is being used by Joe Ruttenberg, A.S.C., in shooting scenes at M-G-M for his current production assignment, "The Bribe." During a lull in the shooting, Ruttenberg explains operation of boom to Ava Gardner, star of the picture.

• JOHN ARNOLD, A.S.C., (left) points out stator construction of his recently patented boom control to Richard Duval, M-G-M development engineer. Control affords boom a graduated range of 40 speeds forward or reverse.



# Speed Boom

**New electronic control for camera boom, developed by John Arnold, A.S.C., affords greater speed and flexibility on the set.**

By E. A. HUNTER

THE RO CAMERA booms in use at M-G-M are being motorized and fitted with a new type controller that enables one man to move the heavy boom in a fraction of a second and at greater speed than ever before possible.

Invented by John Arnold, A.S.C., head of Metro's camera department and who also invented the camera boom on which the controller and motor drive have been installed, the controller provides graduated speeds forward and reverse. Dynamic braking is afforded by the motor itself.

Mounted within the boom truck chassis is a noise-damped 10-horsepower 110-volt DC traction motor which is coupled

with a conventional automobile type rear axle, complete with differential.

Ahead of operator's seat on right side of truck is mounted the controller, a drum type housing containing a rotor and a stator with 80 segments. Leads from these segments run to a series of resistance coils which provide the variation in current necessary for altering speed of the driving motor. Operation of the rotor is smooth and noiseless. A handle extending from the side is gripped by the operator and moved forward to propel boom in that direction, and backward to reverse the direction of travel. Control is so sensitive that boom may be moved as little

as a fraction of an inch in an instant and stopped dead without backlash because of the dynamic braking afforded by the motor.

A safety feature is the warning light mounted on rear of boom which signals to anyone on set who might be standing in its path as the boom is reversed. Light, which is similar to an automobile "stop" light except that it is white, is flashed on automatically as operator reverses control lever.

The boom improvement is the culmination of tests and experiments which Arnold has been conducting since 1940. Although the controller was completely developed some time ago, advent of the war and subsequent restrictions on materials made it impossible for Arnold to obtain the motors and the copper, brass and bronze necessary for construction of working models until recently.

The first boom so improved was recently placed at the disposal of Joseph Ruttenberg, A.S.C., who is now using it in shooting scenes for his current picture, "The Bribe," starring Robert Taylor and Ava Gardner and directed by Robert Z. Leonard. "One of its many advantages,"

(Continued on Page 249)



# NEVER

have we seen  
better screen evidence  
of photographic superiority  
than in this year's program  
of fine feature films  
photographed with

# EASTMAN

# PLUS X

# PANCHROMATIC NEGATIVE

OUR SINCERE

# CONGRATULATIONS

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# DIRECTORS

# OF PHOTOGRAPHY!

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. . . then load up with Ansco Hypan Film!

Hypan offers summer filmers the advantages of bright contrast, extremely fine grain, panchromatic color sensitivity and high resolving power.

All this, plus plenty of speed for even the least expensive movie lenses, adds up to top quality pictures, more easily obtained.

You'll be especially pleased with the professional "theater" look Hypan gives

to your screen images. They're sharp, crisp, free from objectionable graininess. You'll enjoy showing your Hypan movies, over and over again.

Your Ansco dealer has Hypan Film in stock in both 8mm and 16mm sizes. Ask him about it today. **Ansco, Binghamton, New York.** A Division of General Aniline & Film Corporation.

*Beware of the Beach!* In beach photography, it will pay you to remember that the breeze carries sand, salt,

and moisture. When you're not actually using it, keep the lens capped and the camera in its case.

—ASK FOR—

***Ansco***

**8 and 16mm**

**HYPAN FILM**



# MAKING MOVIES FOR MONEY

You can make your cine hobby pay its way by shooting movies for others.

By RALPH LAWTON

*Photos By Los Angeles Recreation & Park Dept.*

FOR A LONG time now, ambitious amateur photographers with Leicas, Speed Graphics and assorted still cameras have been making their hobby pay its way through the sale of pictures. Only recently have a few movie amateurs found that there is a market for their photography, too.

There is a market for 16mm. motion pictures, not lucrative enough for the professional, yet sufficiently remunerative in cash and personal satisfaction to lure the advanced cine photographer.

You do not have to go to Hollywood or New York to find these opportunities. They exist in your very community. Of course, you probably will not find people advertising for your services or out on the street looking for you. You'll have to dig the prospects up yourself. But they're there.

*(Continued on Page 250)*



• **THERE'S** a ready market among the diving fraternity for analysis movies which enable the aqua athlete to see himself in motion on the screen, thus leading to correction of errors for quick improvement.



• **MANY** golfers, anxious to advance from the dub class, will readily pay for movies that show them how to improve their driving, putting, etc.



• **SWIMMERS**, too, hoping to rise to professional ranks, can shortcut training and improve style through a study of form movies made of them.



• **HOPEFUL** tennis star aspirants can be sold movies which show their playing form, point out their faults, thus leading to improving their game.





• OUTDOORS in bright sunlight when the same light is falling on the camera as on the subject, incident light readings may be made from the camera position, with the meter's element pointed toward the lens.

**M**OST DIRECTORS of photography in the motion picture studios agree that measuring incident light is the most infallible method for determining correct exposure.

It was the increasing use of Technicolor over black and white film that brought about recognition of the incident light method as superior to older methods of calculating exposures for photography. With black and white film, there is latitude for some error in exposure that can be adjusted in the developing and printing—something that cannot be done with the same results with color film, either Technicolor or Kodachrome. Thus you've got to have exposure "on the nose" in order to get satisfactory color rendition with Kodachrome or Ansco Color.

Briefly defined, incident light is that which falls directly upon the subject toward the camera. Until recently, the incident light method of exposure determination was confined to professional cinematography since there had not been developed an incident light meter that could be operated rapidly and accurately by the non-professional movie maker. When Capt. Donald Norwood developed the simple and now well known incident light meter which bears his name, he

## Basing Exposure On Incident Light...

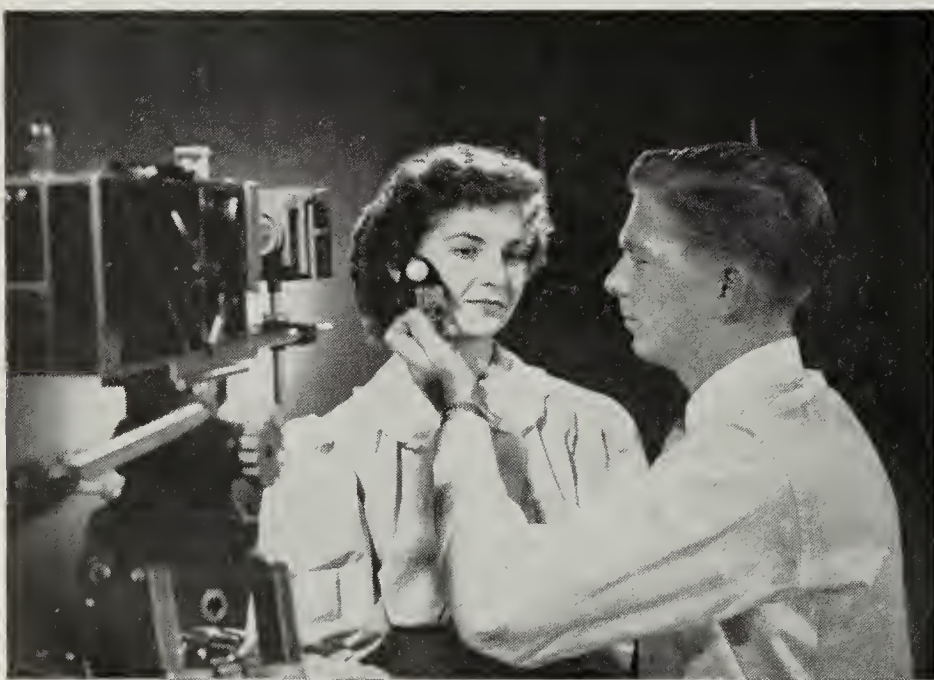
**This new method makes possible direct and positive control of all lighting factors with speed and assurance.**

By CHARLES LORING

paved the way for the amateur cinematographer to use the professional's method of calculating exposure and thus improve the quality of his photography.

Karl Freund, A.S.C., appreciating the merit of the new instrument, was one of the first to use the Norwood Meter in studio production and later became identified with the manufacture of the Model

*(Continued on Page 242)*



• PROFESSIONAL cinematographers consider the incident light method of exposure determination the most accurate. According to this system, the meter is held at the subject's position and pointed toward the camera. Meter design is such that it measures light falling upon subject from all angles.



• FOR PRECISE indoor lighting, the key light is turned on and an incident light reading taken. Then the fill light is balanced to the proper degree of contrast desired. The Norwood Director meter, shown in use here, was developed especially to meet needs of the serious amateur and semi-professional cinematographers.



## FOR "EIGHTS"



**9mm.  $f/2.7$  lens:**  
This fixed-focus, wide-angle lens for the Cine-Kodak Magazine 8 Camera broadens the field of view . . . captures the whole scene.



**25mm.  $f/1.9$  lens:**  
Standard for most 16mm. Cine-Kodak cameras, this fine, fast lens is also produced as a "2-times" telephoto for the "Eights."



**38mm.  $f/2.5$  lens:**  
Provides movie images 3 times as large as those produced by standard 13mm. lenses used at the same filming distances.

## "EIGHTS" and "SIXTEENS"



**50mm.  $f/3.5$  lens:**  
Moderately priced, the 50mm.  $f/3.5$  is an eminently satisfactory long-focus lens for use when the widest apertures are not needed.



**50mm.  $f/1.6$  lens:**  
Fastest of the Cine-Kodak telephoto lenses, it provides a 4-times magnification on 8mm. cameras . . . 2-times, on 16mm. cameras.



**63mm.  $f/2.7$  lens:**  
The longest focal length recommended for 8mm. cameras . . . provides a magnification of 5 times;  $2\frac{1}{2}$  times, on "Sixteens."

## FOR "SIXTEENS"



**102mm.  $f/2.7$  lens:**  
Remarkably fast for a lens of its focal length, the 102mm.  $f/2.7$  produces 4-times magnification on 16mm. movie cameras.



**152mm.  $f/4.5$  lens:**  
Designed for ultra long-range filming . . . provides images 6 times the size of those produced by the standard 25mm. lens.



**15mm.  $f/2.7$  lens:**  
A wide-angle lens as normally used on 16mm. cameras, it can be focused down to as little as 6 inches for ultra close-ups.

# Cine-Kodak Accessory Lenses

Close-up movies from way back . . . movie portraits filmed from discreet distances so that your subjects are unposed and unflustered . . . scrimmage-line sports shots made across a hundred rows of seats . . . studies of wary wild life, timid birds and game—these are "naturals" for telephoto movies . . . and so are scores of other shots that can add variety to your movie reels.

Cine-Kodak long-focus lenses—in magnifications ranging up to 5 times for 8mm. cameras . . . 6 times for 16mm. cameras—provide the solution whenever you just can't move in on your subject. But that's only part of the story, for these lenses are useful, too, when you can—and do—move way in for vastly magnified shots of tiny movie subjects: fragile flowers, insects, machine parts, and the like. For all Cine-Kodak long-focus lenses have scales that permit remarkably close-in focusing. And for use with cameras equipped for visual focusing and centering, most are provided with releases that make possible moving in even closer—beyond the limits of the focusing scale—for camera-to-subject distances as short as 10 inches.

See your Kodak dealer. He can show you how one or two Kodak Cine Lens Adapters will equip your camera for telephoto filming . . . and can help you select the Cine-Kodak lenses that best fit your needs. Ask him, too, about the Cine-Kodak Tripod, a rock-steady and fully flexible camera support that's helpful in any filming . . . a necessity in movie making with lenses of the longer focal lengths.

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**Rochester 4, N. Y.**

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## Cine Kinks

**IF YOURS** is a small typewriter titler, you can make a scroll device out of a round Quaker Oats box. Thrust a heavy wire through ends for an axle and rotate it. back of title card holder.

**TO TINT** short lengths of movie film, or develop title films, use a gallon jug for your film drum. Wrap film around jug, then insert it in larger container partly filled with developing solution. Secure ends of film to jug with scotch tape.

**FOR EASIER** threading of positive film on camera spools in dark, when a red safe-light is used, paint a line on edge of slot in core of spool with red or white paint. Also paint a line on edge of spool flange to indicate position of slot.

**EMERGENCY** threading light for your projector may be made from a small pen light tied to a snap clothes pin. Pin affords clamping light to projector, thus releasing hands for threading film.

**TO REMOVE** fuzz that collects on edges of film aperture during screening of a picture, blow it away, without stopping projector, using a small hand syringe available at small cost from your drug store.

**FOR RAPID** rewinding of movie films, attach a sewing machine motor to your editing board so edge of reel, mounted on rewind, rides on motor pulley. Use regular sewing machine motor foot switch to control speed.

**FOR QUICK** identification of wound and non-rewind reels of film, use white leaders, and black tail pieces after the end title. Thus, a white leader indicates beginning of film; black, the end.

**TO SHOW MOVIES** to bed-ridden shut-ins, project movies on ceiling of room, using a mirror set before projector at an angle of 45°.

**LABELS** will adhere to darkroom bottles and film cans if made on strips of painter's masking tape.

**TO KEEP** film taut, while subjecting it to dye fade solutions, make a support from a length of wire about 12" long. Bend wire at ends to form hooks to fit in sprocket holes. Insert film thus mounted in a narrow bottle filled with fading solution.

# Are You "One In A Million?"

You are if you shoot amateur movies. Eastman Kodak Company reveals that more than 1,000,000 Americans today are regularly using 8mm. and 16mm. cine cameras.

Today it is estimated that there are more than 1,100,000 families in the United States who own amateur movie cameras. In the 16mm. field there are an estimated 325,000 cameras in active use; in the 8mm. field the total reaches an estimated 775,000. Approximately 950,000 families, or nine out of ten owning movie cameras, also own a motion picture projector of some type.

In addition, 16mm. movies, both silent and sound, are today playing an ever more important role in education, sales, and scientific and industrial research. Spurred by the tremendously successful use made of training films by the armed forces during the war, it is estimated that approximately 1/3 of all sales of amateur size movie film and equipment are for other than amateur movies.

The first quarter century of home movies—during which movie making on 8mm. and 16mm. films has grown to an internationally popular hobby and an important aid to education, science, business, and industry—will come to an end July 5.

On that date, in 1923, the Eastman Kodak Company placed on sale in New York City the first complete 16mm. motion pic-

ture outfit—including camera, film, and projector—and announced the first amateur film processing service which made possible movie making for everyone.

The reversal film—in which the image on the film was reversed from a negative to a positive during development—was the prime factor in making home movies economically practical. Prior to its introduction, amateur movie makers used either the regular 35mm. film, some split from 35mm., or 35mm. with two or more rows of pictures. Some of the film widths were 35mm., 28mm., 22mm., 21mm., 17.5mm., 16mm., 15mm., 11mm., and 9.5mm. To add further to the confusion, perforations varied in size, shape, and location. Another deterrent to amateur movie making was the high cost of film since it was necessary to use both a taking, negative, film and a projecting, positive, film.

The quality of the finished amateur print was often, in those days, not too good because of poor developing and printing equipment and/or inexperience on the part of the individual doing the processing. Graininess was also a problem, espe-

(Continued on page 249)



• **FIRST CINE KODAK** was this boxy number operated by hand crank. It afforded focusing directly on the film by means of tubular through-the-camera finder extending to back of camera. Same model was subsequently provided with an electric motor operating off re-chargeable batteries. By 1925, smaller streamlined Cine Kodaks replaced this "Model A" and in 1932, Eastman Kodak introduced the first 8 mm. cameras and film. Today there are in regular use more than 1,000,000 8 mm. and 16 mm. movie cameras. One-third of latter are said to be in use in professional and scientific fields.





• HELICOPTER view was achieved, in shooting movement of cars on this miniature set, by use of Zoomar lens on the Cine Special camera. Ten thousand eight hundred individual moves of the scale model cars were required for this scene for Aetna Company's latest 16mm. film.

## Insurance Company Produces Own 16mm. Films, Using Scale Models And Animation

By ARTHUR ROWAN

**T**HREE-DIMENSIONAL animation photography with a Cine Special features "Live and Let Live," latest educational loss prevention film produced in 16mm. color by the motion picture bureau of Aetna Casualty and Surety Company of Hartford, Conn. The bureau has produced twenty-five educational films for the company since its establishment in 1940 and is said to be the only complete 16mm. film producing unit maintained by an insurance organization.

When plans for a new highway safety film were first formulated by the Aetna Company, it was decided to feature ten of the most important rules of safe driving.

The next step was to determine the technique to be used. Several factors influenced the decision to do the entire film in animation. Three-dimensional animation had been used by the Aetna motion picture staff in a short sequence of an earlier safety film on boating, "Safety Ahoy," and experimentation and research showed that this technique would be especially suitable for a highway safety film for these three reasons:

First, traffic sequences could be "shot" from above and, by offering a "helicopter view" of both safe and unsafe driving practices, the film would show more clearly than by any other method, how accidents happen, why and how they may be avoided.

Second, complete control of the set could be had at all times, a condition which would be almost impossible in outside location shooting. Exact road conditions could be set up and seemingly serious accidents staged without danger to life and limb.

Third, in three-dimensional animation single-frame photography is used and there is no image blurring of subjects, even when they are "moving." In addition, the central subject can be kept in absolute focus and the finished pictures have an almost startling clarity. This clarity was absolutely necessary because of the diagrammatic nature of the proposed film.

The decision to use animation in filming "Live and Let Live" brought with it a multitude of technical difficulties—designing and building miniature sets, developing backgrounds, and the technique of moving scale-model cars and trucks on the sets realistically. Into the solution of these problems went much thought and many man-hours of labor.

Each set—and there were fifteen—was built on a quarter inch scale, and was devised, designed and built by the staff. A minimum of prefabricated material was purchased and much improvisation was necessary.

The movement of cars on the sets was the greatest problem. Each movement had

(Continued on page 245)



DEPENDABLE UNIFORMITY  
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EXPOSURE METER

- provides the most accurate and most consistent exposure determination for negative, reversal, and color films.
- provides best flesh-tone rendition.
- includes special cine scale of frames per second.
- most versatile for motion picture production.

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**Photodisk\***—measures key-light in foot-candles—speeds up the balancing of lights for closeups— aids in controlling effect lighting.

**Photogrid\***—Measures brightness range— aids in controlling brightness of prop lamps within the scene.

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## BASING EXPOSURE ON INCIDENT LIGHT

(Continued from page 238)

A meter. At first this model sold for a high price and was available only to Hollywood directors of photography. But recently the Model B meter was put into mass production by the American Bolex Company and is now available on the general market at a popular price.

In taking incident light readings, the meter is held at the subject's position and pointed *toward* the camera. Thus, the light falling on the subject is measured at the angle from which the camera lens will see it. The Norwood Director has a detachable plastic hemisphere (called a Photosphere) mounted over its photoelectric cell aperture, which enables it to register the light falling upon it from any direction. This makes it possible to measure the combined intensity of the key light, the fill light, the kicker and the top light.

Making incident light readings for exterior movie scenes with the Norwood meter amounts to nothing more than measuring the intensity of the sun as it falls on the subject, and converting that reading to the proper aperture opening for the camera's shutter speed and the speed of the film stock being used.

The meter is held at the subject, with the photo-electric element pointed toward the camera, and the exposure is read. Best results are obtained by holding the meter at arm's length so that any reflection from light clothing worn by the user will not influence the reading. For most outdoor cinematography, where the general illumination is the same at the camera position as at the subject, the meter may be held at the camera position instead. One must be sure, however, that the light falls upon the meter in the same way that it would if the meter were held at the subject. When shooting above or below eye level, the meter should be tilted at the same angle as the camera.

When filming distant views of mountains or other landscape features that are cross-lighted or back-lighted, experienced photographers find that results will usually be improved by slight under-exposure. The reason for this is that the dispersion of light by aerial haze as well as reflections from the subject itself cause the subject to photograph lighter than it appears to the eye.

In shooting silhouettes or brilliant sunsets, the usual procedure of incident light reading is reversed and the meter is pointed *toward the scene*. Actually, the basic principle remains the same since, in both cases, we are really measuring the intensity of the main source of light.

Let us say that you are shooting some close-ups outdoors, using reflectors to fill in the shadow side of your subject's sunlit face. With an incident light meter it is

possible to accurately measure the intensity of the reflected light from the reflectors as well as the direct light from the sun, and to balance the two in the most effective ratio. Using the Norwood Director meter, for example, you would replace the Photosphere with the Photodisk, a translucent plastic disk which fits over the photoelectric aperture. The Photodisk is first turned toward the sun and the needle indication is noted—let us say that it reads 5,000 foot-candles. Next the meter is turned toward the reflectors and shielded with the hand if necessary to prevent the direct rays of the sun from producing a false reading. If this reading is, for example, 2500 foot-candles, then the ratio between key-light and fill-light is 2 to 1, an ideal balance for color close-ups. For color it is not recommended that the contrast between key-light and fill-light be greater than 4 to 1, but in black and white filming very dramatic results can be produced by using lighting contrasts as great as 16 to 1.

Incident light exposure control really comes into its own when filming interiors, for here proper balance of lighting is even more important and more difficult to achieve than it is outdoors. The principle remains the same: Hold the meter at the subject position and point it toward the camera.

Now let us take, step-by-step, the procedure of lighting subjects on an interior set:

1. Decide what aperture you wish to use in filming the scene, and determine from the scale on the meter what your light level must be in order to shoot at that aperture with the shutter speed of the camera you are using. For example, an aperture of f2.8 at 1/50 (24 frames per second) will require a light level of 650 foot-candles for filming on Kodachrome Type A stock.

2. Next, turn on your key-light and adjust it at the desired angle for lighting your subject. Hold your meter at the subject, point it toward the camera, and take an experimental reading.

3. Move key-light closer or farther away until it measures 500 foot-candles on the meter (assuming that the addition of the fill-lights will bring the general level up to the required 650 foot candles).

4. Turn on fill-light and adjust it to the required brightness in relation to the key-light. Here, again, that brightness depends upon the ratio of contrast desired in the scene.

5. Next, turn all lights on and take an incident light reading from the subject position. The meter should read 650 foot-candles. If it doesn't, vary your key-light intensity until it does. This usually re-



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quires very little adjustment.

6. In order to check your background illumination, turn on just the background floods and carry your meter about the set, keeping the element pointed always at the camera. In this way you will be able to read the ratio of contrast between subject and background lighting, and you can determine whether or not your background is evenly lighted.

The bane of the amateur cameraman when it comes to interior lighting usually concerns keeping extremes of brightness contrast ratio within the latitude of the film. Until he develops a "feel" for this factor, he may find that his highlights are "burned up" and his shadows are too dark.

The Norwood meter, converted by means of the Photogrid which slips easily over the photoelectric element, provides a very accurate means of measuring brightness contrast ratio in the scene. The Photogrid is a perforated disk which effectively converts the meter for the measurement of reflected light.

Now, it is accepted fact that most color movie emulsions will reproduce color properly, provided that objects in the scene are not more than 4 times brighter than the mid-point of brightness, nor 4 times darker than the mid-point (a total latitude of 16 to 1).

To determine the brightness contrast range of the scene with the Norwood meter, point the Photogrid toward various areas of the subject, holding the meter about 6 inches from the subject. By dividing the highest reading by the lowest, one can obtain the brightness range within the scene. If, for example, your highest reading were 64 and the lowest 4, then your ratio would be 16 to 1. Anything brighter than 64 in the scene would appear washed out.

Remember, when determining exposure by incident light readings on an interior set, always hold the meter close to the principal subject rather than near the camera, because the light is usually quite different in these two locations.

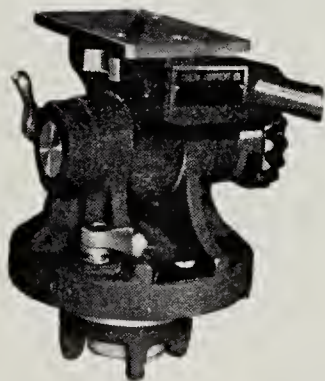
Because the control of exposure by incident light reading is relatively new to the average amateur cameraman, certain misconceptions exist which can be cleared up if the underlying principles are carefully explained.

For example, the question is often asked why you would give a light subject and a dark subject the same exposure (according to the incident light theory) just because the same amount of light is falling on each—when actually these two subjects reflect different amounts of light.

The answer is simply that an incident light meter gives a normal average reading of the subject in terms of how it would look to the eye under that particular light source. If a pile of coal and a pile of snow were both given the same exposure under an incident light source,

# "PROFESSIONAL JUNIOR" CAMERA EQUIPMENT

## FRICTION TYPE TRIPOD



Top plate handles 16mm. EK Cine Special with or without motor; 35mm. DeVry; B & H Eyemo with motor and 400' magazine; Speed Graphic or 8 x 10 View; and all 16mm. hand-held cameras. The removable head is interchangeable with the Gear Drive head. Both types fit "Professional Junior" standard tripod base, "Hi-Hat" and "Baby" all-metal tripod base.

Gear Drive head, made of Dow Metal, weighs but 5½ lbs. and is interchangeable with the Friction type head. It handles all types of cameras enumerated above. Snap-on metal cranks control pan and tilt action from both sides. Worm-driven gears are Gov't spec. bronze.



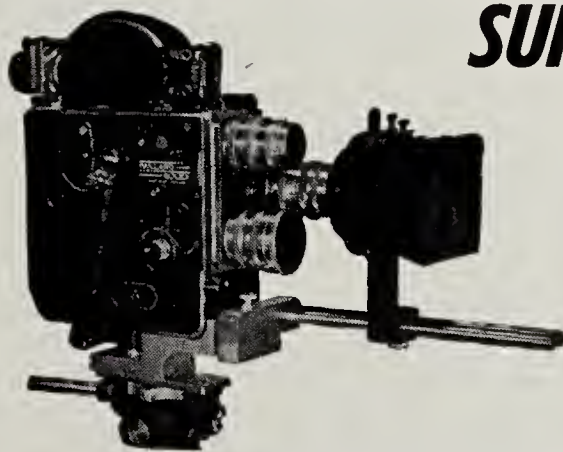
## BLIMP for 16mm E.K.

### CINE SPECIAL

This Blimp, constructed of Dow Metal, is thoroughly insulated to afford absolutely silent operation. Has many exclusive features that allow focusing and lens calibration changes from the outside while taking pictures. Blimp takes synchronous motor drive which couples to camera. A dovetail bracket is provided to mount an erect image view finder.



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the snow would appear white, and the coal would appear black. If, on the other hand, you made reflected light measurements of both piles and compensated your exposures according to actual meter readings, both the snow and the coal would appear as grayish piles because you would have underexposed one and overexposed the other.

It is granted, however, that a certain amount of compensation is sometimes desirable in exposing by incident light control, because the subject as actually seen by the eye might appear too bright or too dark. Therefore, the cameraman is fortunate in being able to improve somewhat upon that which the eye sees.

If, for example, you were filming an extremely light colored subject, such as a white wall in full sunshine, a good deal of glare would be present. Even to the eye, the wall would appear better if you were wearing sun glasses that would cut down the glare. In such a case you would take your incident light reading in the normal way, but close the lens diaphragm  $\frac{1}{2}$  stop more than the indicated aperture. However, if a person is to appear prominently in the scene, do not make this compensation or the flesh tones will photograph too dark.

If, on the other hand, you are filming an unusually dark subject, such as dense foliage, give the scene  $\frac{1}{2}$  stop more exposure than the aperture indicated by the

meter. Here, again, no compensation should be made if a person is prominent in the scene.

Incident light reading is based on exposing for the norm of the scene, the norm, in most cases, being the flesh tones. Flesh tone is the only tint in color photography which the untrained eye readily recognizes as either good or bad. All other colors may be acceptably lighter or darker, warmer or cooler, but flesh tones must be right.

However, any photographic subject may be rendered darker or lighter than it appears, according to the artistic desires of the cameraman. The Norwood Director meter establishes a consistent and known point of reference from which departures may be made to achieve special effects. This makes it easy to duplicate these effects at any time by utilizing the same departure in exposure as determined from previous experience.

Incident light exposure control is the professional technique of getting properly exposed movies, but the system no longer belongs solely to the professional cinematographer working on the Hollywood sound stage. More and more progressive amateur and semi-professional cameramen are discovering incident light exposure determination as a means toward lifting the quality of their films from the "home movies" class toward the professional level.

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## MAGNETIC CUEING

(Continued from page 231)

on surface of the film near the edge, between two of the perforations, and these actuate two magnetic pickups which set the effect or change controls in motion.

The magnetic paint, as we term it, is a simple formula that consists of chemically reduced powdered iron mixed in a binder of quick-drying lacquer, such as clear fingernail polish. A dab of this paint is applied to the film with a small brush such as is found in film cement bottles. The paint dries in about 20 seconds. The magnetic paint may be applied to either the base side or the emulsion side of the film. If changes are made in the film, the magnetic dots can be removed by scraping the edge of the film with a single edge razor blade or other sharp tool such as a retouching knife. No damage to the film results from this scraping operation if reasonable care is exercised in the operation.

After being prepared for printing, the film is threaded in the printer in the usual way. A magnetic detector or pick-up head "scans" the edge of the film and every time a dot of magnetic paint passes, it causes a change of magnetic field in the pick-up head. This magnetic impulse is transmitted to an amplifier over a low impedance transmission line. A multiple

alloy quadruple shielded input transformer with good low frequency response is used to insure good signal-to-noise ratio necessary for dependable operation.

The magnetic impulse is amplified in a high-gain low-noise amplifier circuit. After amplification, the impulsion is used to "trigger" a heavily biased one shot multivibrator with a rapid recovery time. The multivibrator operates a pilot relay which in turn controls a power relay. The power relay is used to operate the solenoid mechanism for light changes or "fade-in" and "fade-out" devices.

As finally designed the magnetic cueing device has two independent channels which operate from two separate pick-up heads. One pick-up scans one side of the film and is used to control light changes. The other pick-up head scans the opposite side of the film and is used to control a "fade-in" or "fade-out" device. The second channel could also be used to control a mechanism for inserting color correction filters in color printing. The cueing device can be installed on any existing motion picture printer. The installation is comparatively simple and can be completed in a few hours.

It is hoped that the introduction of this new magnetic cueing device will help to



standardize the 16mm. printing work in laboratories all over the country. If a standard number of frames between the magnetic dot and the printing aperture can be established, so that a film printed in one laboratory can be printed in any other laboratory without changing position of the magnetic dots, then a very great advance toward standardization and simplification will have occurred.

Although the device was originally designed and built for their own use, so many Hollywood laboratories have expressed interest in it that Academy Films has decided to manufacture and place it on the market.

## INSURANCE COMPANY PRODUCES OWN FILMS

(Continued from Page 241)

to be photographed individually and consequently every move had to be figured mathematically and calibrated on the "highway" of the set. Several methods of locomotion were attempted. First the sets were moved in relation to a "stationary" car. Then magnets were used to move the tiny automobiles. These methods were abandoned and it was decided to move each object manually. This greatly increased the man-hours spent in producing the film.

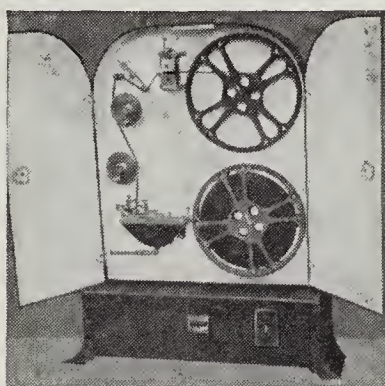
One of the traffic sequences called for a six-lane parkway. This was to be a "pan" shot and the actual set distance to be covered was 20 feet. Cars had to be moved on all six lanes, and on three of the lanes they were moving in an opposite direction. In addition, one of the automobiles—the "culprit car"—was to weave from lane to lane to simulate the zig-zag driver. One thousand individual frames were shot during this sequence; and also, because it was a panoramic scene, the camera had to be moved one thousand times on a calibrated scale. Ten thousand eight hundred individual moves of the scale-model cars were required for this scene, which runs 43 seconds in the completed film, and which took eighty man-hours of labor to shoot.

To get accurate car speeds, it was calculated that a quarter inch move by a car per frame represented a speed of twenty-five miles per hour. Other speeds were in multiples of this distance—50 miles an hour being shown by moving the car one-half inch per frame. The course each car took on the set was lined on the highway and graduated distances measured on this line, one graduation for each frame.

In addition to educational films on highway safety, the bureau has made films on fire prevention and home safety, crime prevention, nutrition and first aid, industrial safety and sports safety.



# S.O.S. SPECIALS of the Month

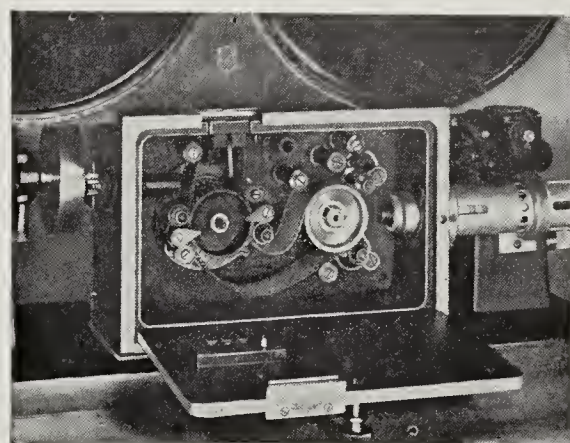


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## ROPE SETS A PRECEDENT

(Continued from Page 231)

The miniature skyline was probably the most important background ever built for a motion picture because the lighting of buildings, the changing sky and cloud effects from sunset to dark—all seen from the apartment—were to denote the passing of time, so important in the story's denouement. This exact reproduction of nearly 36 square miles of New York skyline was lighted by 6,000 25-watt incandescent bulbs for the windows in the buildings and 200 neon signs which required 150 transformers.

As the mechanics of the set were being ironed out, director Hitchcock rehearsed his shooting plan with his director of photography Joe Valentine, A.S.C., William Skell, A.S.C. from Technicolor, and his crew and cast of eight: Jimmy Stewart, John Dall, Farley Granger, Joan Chandler, Sir Cedric Hardwicke, Constance Collier, Douglas Dick and Edith Evanson.

Hitchcock had worked out his plans to the last detail. The elapsed time of the story was one hour and 30 minutes. On the screen the picture will run one hour and 30 minutes. The script which was written without scene numbers was first rehearsed in sections of nine minutes, because a reel of Technicolor film is never longer than 952 feet.

At the beginning of the rehearsals Hitchcock wouldn't commit himself on how long he thought it would take to get the picture finished. His comment was, "Because of the nature of the story we shall have to rehearse it well—whereas today most actors and technicians come on a set 'cold.' We hope to make the shooting go quicker—much quicker."

In the final count the picture required 36 days, 14 in rehearsal, 2 days of tests, and 20 shooting days. After the initial rehearsals of the entire script the cast and crew would rehearse one reel and shoot it the following day.

To watch one of the new Hitchcock type "takes" was to watch something new under the Hollywood sun. It was like being backstage only more chaotic. For

each nine to ten minutes "take" the camera—mounted on one of David O Selznick's poney express dollies—continuously followed the action. Actors did not rest when the camera was out of range because it would return to a different angle momentarily and they had to be in their position with new props. All of the furniture was wild. Tables and chairs were pulled away by four prop men as the camera swung through the apartment. The wild walls were pulled out of the way of the camera and then rolled back into position. Five sound men operated overhead mikes. Five more boom boys cranked their mikes into and out of position on cue. Electricians, grips and cable boys knew each move in each reel as well as the stars.

To be certain that the camera dolly (riding free of any tracks) was rolled or pulled back in its right position for each angle during the long "takes," numbered circles were tacked to the floor. One technician's job was to indicate with a pointer the next camera position, and then give a hand cue for the grips to move the dolly to the next numbered circle. To help the grips in their ticklish chore of getting the camera exactly into position on each move, a flashlight was suspended under the camera directly under the lens. When the small circle of light which it cast on the floor was directly over the numbered circle the grips held the dolly at that position and breathed easier until their next cue.

According to cameraman Valentine, the most moves made in any one reel was 39 different angles. The least number of "takes" on any one reel was three. The most was 15.

"Our worst calamity," said Joe, "was the day one of the wild walls didn't move quite fast enough and the camera went crashing right into it. The crackup jimmied the friction head of the camera and we suspended filming for the day."

The lens used throughout the filming was a 35mm. lens which photographed everything from 2½ foot closeups to long shots of 30 feet. A Selsyn motor was cali-

brated to the lens to insure its correct focus, and the blimp head was made especially to allow a 2½ foot focus.

"My biggest problem," said Joe Valentine, "was the lighting. Especially the job of eliminating mike and camera shadows. In the reel where we had ten mikes in operation we had to have electricians working five dimmer panels."

Valentine muted the color to a low key by neutralizing the set and costumes so that there were no glaring contrasts. He attempted to photograph color purely as the eye receives it. Its key use was in the sunset. Subtly employed, the yellow glare of the late afternoon sun faded to soft gray with light reflections on the moving clouds (made of spun glass), then died slowly and finally to dusk, then dark blue darkness with the lights of the city appearing in the miniature skyline.

During the final gripping moments of the story, when the body was discovered and the two killers were trapped, the set was flooded at intervals by great pulsations of red, green, and white light, which supposedly came from a huge neon 'STORAGE' sign just outside the living room window. The impact of the rhythmic light changes added dramatic tension similar to a musical effect. To accomplish this, light with the different colored gelatins were fitted with shutter devices electrically operated in synchronization with the blinking of the neon sign.

The question was asked—how does this new long "take" technique effect the this new long "take" technique affect the cast and crew? Cameraman Valentine says it means more careful planning by the crew members, and will be of the greatest help to the actors.

"The way we usually film a scene," said Valentine, "by making first a master shot, then a medium shot, and finally a close-up keeps the actors waiting endlessly. By the time we get around to the close-up the stars are exhausted and the spontaneity of the scene is lost. But with this reel by reel filming the actor can sustain a characterization, and maintain an even flow and pace in his work."

To the question—what does this do for the audience, what's the difference whether the picture is shot a reel at a time or line by line?—Hitchcock gives the answer, "The audience must never be conscious of it. If the audience is aware that the camera is performing miracles the end itself will be defeated. The camera, rolling without a single stop through the entire film, is merely an aid to the story which is full of suspense. The result I'm after is to excite the audience by making the picture flow smoother and faster."

The Kodak Research Laboratories at Kodak Park, Rochester, N. Y., are largest laboratories in the world devoted exclusively to research on photography.

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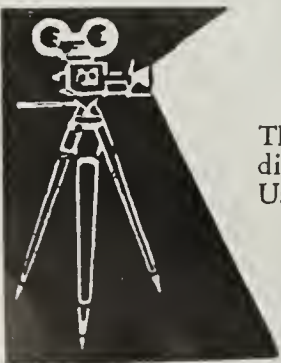
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## BULLETIN BOARD

(Continued from Page 224)

scene. The photographer covered the disaster from both ground and air. Footage was flown to New York and telecast within 24 hours.

**UNIVERSITY** of California at Los Angeles' Theatre Arts department has just moved into its new \$40,000 temporary building. Appropriated are funds for building a plant which will house a large sound stage equipped with catwalks for production of motion pictures. Only documentary and training films are undertaken at present. Off the sound stage is a sound dubbing control room, a workshop for instruction in cinematography and a darkroom for developing film. Cutting and editing rooms occupy another section next to the animation studio. Kenneth Macgowan is chairman of the department.

**AMONG THE A.S.C.** members on photographic assignments overseas are Leon Shamroy, in Rome; Thomas Tutwiler, in Greenland; Harry Perry, in the South Pacific, and John Dored, circling the globe.

Recently returned from foreign assignments are Al Gilks, who photographed a picture in Spain; Ray Fernstrom, from

### FRANK CLARK

THE passing of Frank Clark, in an accidental plane crash June 12th, is mourned by many members of the A.S.C. who owe much to this intrepid flyer, stuntman and photographic assistant for his devoted services in piloting them safely and skillfully on countless aerial photographic assignments.

Clark, who was 49 and a flyer for nearly 30 years, played chief pilot in many motion picture productions featuring aircraft. He had just finished an assignment with M-G-M the day before he died. A Lt. Colonel in the Air Force during World War II, Clark also was founder and past president of the Motion Picture Pilots Association. His business partner, Mark Owen, who was a Warner Brothers executive, also died in the crash.

Survived by his mother, who lives in Madera, Calif., Clark's passing leaves a void in the hearts of many A.S.C. members who credit many of their aerial photographic scoops to Clark's skillful piloting and his uncanny ability to aid the photographer get spectacular shots in the air.

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Sweden; Lucien Andriot, from Morocco; Floyd Crosby, from Palestine; O. H. Borradaile, from the Antarctic; Paul Ivano, from Honolulu; David Horsley, Norway; and James Wong Howe from China.

**AL GILKS**, A.S.C., really found himself behind the eight ball on his most recent photographic assignment at M-G-M where he did the photography on Pete Smith's latest short subject having to do with the game of billiards and more par-

ticularly with the skillful cueing of billiard aces Jimmy Caros, William Mosconi and Charles Peterson.

Gilks used two cameras to film the players—one turning at standard sound speed, the other turning at 96 f.p.s. to produce slow motion studies of the cue wizards in action. His main problem was building up light intensity to accommodate lens apertures of both cameras in order to insure maximum depth of focus.

## PHOTOGRAPHY FOR TELEVISION

*(Continued from page 229)*

ity on the photography of motion picture films for television. Speaking before the National Association of Broadcasters recently, Fairbanks said that when television is as advanced as is radio today, video stations will devote more than 50 per cent of their program time to motion pictures because film is the only proven method by which a show can be planned, rehearsed, staged, edited, previewed and telecast with professional perfection.

He further emphasized that film eliminates the "human errors" which invariably threaten disaster to "live" productions, whereas with film, a mistake is easily edited out. Scenes done badly can be re-photographed. Obviously, a filmed television program is the only safe method of presenting a sponsor's message. If the advertiser states that his razor blades won't cut the shaver; his aspirins will dissolve immediately; or "Bisque-Quicke" will turn out delectable brown biscuits in a jiffy, he wants to be sure that demonstrations are not "fluffed" on the television screen.

All of the cinematic tricks of the motion picture photographer—process shots, miniatures, slow and accelerated motion, animation, optical tricks—all these are either difficult or impossible to do in "live" telecasts. But they can be accomplished easily on film and add tremendous production value to any program, Fairbanks pointed out. "And," he continued, "exterior scenes—always of vital importance whether for westerns, dramas, or comedies—are extremely difficult to do 'live'—especially if interspersed with interiors. Film, however, makes possible the use of as many exterior scenes as desired, adding life and realism to all programs."

Fairbanks believes that only through the motion picture film can unlimited action be obtained. A television program using "live" action, he pointed out, has the same limitations as a stage production. All action at any given time is on a single set and because the action is continuous, the players are held to a single costume. With film there are no intermis-

sions, locale is not restricted, and as many sets and costumes as needed can be used. In short, filmed television programs free the writer, the director and the producer of the limitations which shackle the "live" show productions.

Perhaps one of the greatest arguments in favor of filmed video is the problem of time. Sponsors using film will be able to book shows at whatever hour they wish and over selected stations. In fact, as Fairbanks pointed out, the film method is the most practical way a sponsor may immediately achieve anything like a national network coverage with his program. Small and remotely situated—but nonetheless important—stations thus may be tied together during the early stages of television.

In the production of the "Public Prosecutor" and other series of video films for National Broadcasting Company, Fairbanks made many discoveries and proved many of his theories about the photography of television films. One has only to witness the unfolding of one of these specially produced programs on the television screen to observe for himself that film photographed in the customary manner for theatrical release is not, and never will be, satisfactory for television. Although many stations now are telecasting old motion pictures because of the scarcity of program material, once films shot especially for television are shown, this practice will gradually cease.

When theatrical pictures are televised, deep shadows lose their effectiveness and sometimes turn white on video receivers. Long shots blur and it is difficult to recognize the players. Thus, as Jerry Fairbanks pointed out in his talk, the photography of television films calls for new lighting techniques; the avoidance of long shots; and a strict regard for television's small screen and limited grey scale.

"In preparing our 'Public Prosecutor' and other television series for the National Broadcasting Company," Fairbanks explained, "we are using new techniques developed during nearly three years of re-

search. These series—the first to be filmed especially for video—were photographed in a very high key with back lighting emphasized. We used much more camera movement than we would use in theatrical filming because of the close grouping of players. This camera movement, of course, gives the viewer the feeling he is seeing more action than actually was photographed.

"Close grouping of actors is a must because of the smallness of video screens. If large, sharp images and facial reactions are to be clearly received on video sets, players must remain closely grouped. Half figures are the rule—not the exception. Pan and dolly shots should be emphasized and there are many more—and larger—close-ups than would be used in preparing film for theatrical distribution.

"In filming for television, the camera must be carefully centered on the players and action because of the curvature of the television receiving tube. Any action on the edge of the picture is likely to be distorted because of this curve. Extreme blacks and whites should be avoided because they will not televise satisfactory. Rapid pan shots also will blur and large sharp lettering should be used in all titles.

"Even the technique for sound recording is different. In theatrical pictures the voice is recorded 'big' to go with the 'large' picture being projected on the theatre screen. For television, the sound should be 'small' for the small receiving screen. Sound for regular pictures is designed for large auditoriums. Sound for television—like radio—should be recorded for hearing in an average living room.

"Sets for the series we filmed for NBC are constructed smaller than the sets we build for theatrical pictures. This is done so that a larger section of the background is visible to the viewer, thus creating more atmosphere and more quickly establishing a locale. If larger sets were used, the video audience would see a smaller section of the background because filming for television necessitates the camera being closer to players and sets."

In photographing the "Public Prosecutor" series, Fairbanks used both 16mm. and 35mm. Mitchell cameras. Some of the films were produced entirely in 16mm. while others were made on 35mm. film. The latter, of course, were reduced to 16mm. in the printing which is the size film used in NBC's projection equipment.

"In an effort to provide television films with the same intimacy of radio," said Fairbanks, "we have borrowed the technique of making the camera a person. The camera becomes 'you'—the television audience. In brief, 'you' examine the clues; 'you' accompany the Prosecutor as he makes his investigation; 'you' are a part of the drama. Players frequently talk to 'you' and 'you' are given the same opportunity to solve the crime as the players in the film.



"All timing is faster for video film. The theatrical film is designed for an audience of hundreds. The television picture should be made for an audience of five—five people at home—with all the distractions of home. Scripts should be prepared in such a way so that the viewer can follow the plot by listening—so that he is not required to remain glued to the set at all times to follow the action. On the other hand, the dialogue should not explain every happening. In short, television film writing should be a careful blending of radio and motion picture scripting.

"The acting technique for television motion pictures is a combination of stage and screen. Long shots—long shots for television, that is—require the cast to play scenes somewhat 'broader' than would be necessary for theatrical film. The reason is obvious. Facial expressions are lost in longer shots because of the small video screen. In close-ups, however, the technique is the same as for regular movies.

"Television will create thousands of new positions and opportunities in the motion picture field. It will be responsible for the development of a tremendous new film industry—an industry devoted to the making of quality entertainment especially for television.

"How big will this industry become? Only time can tell. But if television requires films for even fifty per cent of its programming—as we believe it shall—it will eventually total a need for more than 300 hours of film each week. This figure, when compared to the present Hollywood output, totals a tremendous new prosperity for all motion picture employees."

## ONE IN A MILLION?

(Continued from Page 240)

cially with the smaller negative sizes. Another disadvantage was the use of cellulose nitrate film base which was highly inflammable and, therefore, unsuited to amateur use.

The introduction of Kodak's 16mm. reversal film changed this situation, however, by providing a safety-based, fine-grained film and standardized processing service which made amateur movie making practical for all.

• At the time of the development of 16mm. reversal film it was estimated that the cost of 35mm. professional film was \$7.50 per minute of projection while the new reversal film cost the amateur only about \$1.50 per minute. Since that date costs to the amateur have been steadily reduced. Today, despite tremendously increased production costs, and the costs entailed in producing vastly improved and technically superior films, the cost to the amateur for 16mm. black-and-white movies is well below that figure.

The vast majority of today's amateur movies are made, however, in full color with Kodachrome Film. Kodak introduced the first film for amateur motion pictures in color in 1928 with the Kodacolor process. Announced at a special party at Mr. Eastman's house before a bevy of internationally famous guests, including Thomas A. Edison, General Pershing, Hiram Percy Maxim, Sir James Irvine, Roy Howard, and Adolph Ochs, the process used a special black-and-white film with countless tiny lenses embossed on its surface. In addition, it employed special three-color filters on both the camera and projector to produce color pictures on the screen. Kodacolor motion picture film was supplanted in 1935 by the present day Kodachrome film which by reversal methods and dyes in the emulsion resulted in a full-color film which was much easier for the amateur photographer to use.

Other contributions made by Kodak to the 8mm. and 16mm. motion picture field include: in 1931 the first 16mm. sound and magazine films for use with equipment designed by other manufacturers; in 1932 the first 8mm. films and camera (which cut amateur film costs by more than half and brought amateur movie making within the reach of additional thousands) and the first extremely high speed motion picture camera; in 1940 the first 8mm. magazine films and magazine camera; and in 1948 the first 16mm. camera designed specifically for television recording purposes to be placed on the market.

What advancements there may be in the next 25 years are not predictable but as long as scientific research continues advancements are inevitable.

## SPEED BOOM

(Continued from Page 234)

says Ruttenberg," is that the boom may now be used in narrow quarters on complicated sets. The smooth and rapid acceleration now afforded by the improved RO camera boom is something that was not possible heretofore."

John Arnold, who fathered the invention, is most enthusiastic over the boom's performance on the set. "It worked perfectly on its initial test run," he said.

In all, 10 claims have been allowed on Arnold's invention by the U. S. Patent Office,\* with further claim allowances expected on more recent improvements. The boom control is but one in an impressive list of inventions and developments of camera equipment accomplished by Arnold during his association with Metro Goldwyn Mayer.

\* U. S. Patent No. 2,211,088.



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# Current Assignments of A. S. C. Members

Members of The American Society of Cinematographers were engaged as Directors of Photography in the Hollywood Studios during the month of June, as follows:

## Allied Artists

- RUSSELL HARLAN, "Last of the Badmen," with Barry Sullivan and Marjorie Williams.

## Columbia

- BURNETT GUFFEY, "Undercover Man," with Glenn Ford and Nina Foch.
- CHARLES LAWTON, JR., "Walking Hills," with Randolph Scott and Ella Raines.
- JOSEPH WALKER, "The Dark Past," with William Holden and Nina Foch.
- REX WIMPY, "Quick On The Trigger," with Chas. Starret and Smiley Burnette.
- IRA MORGAN, "Photo Finish," with Gloria Henry and Stanley Clements.
- HENRY FREULICH, "Song Of India," with Sabu, Gail Russell, Turhan Bey.

## Eagle-Lion

- JOHN ALTON, "Red Stallion In The Rockies" (Cinecolor), no cast list available.
- GUY ROE, "Inside The Wall," with Lucille Bremer and Richard Carlson.

## Independent

- GEORGE H. ROBINSON, "FBI Meets Scotland Yard," with Dennis O'Keefe, Louis Hayward.
- GREGG TOLAND, "Enchanted," with Teresa Wright, David Niven, Evelyn Keyes.
- GEORGE BARNES, "The Numbers Racket," with John Garfield, Beatrice Pearson.
- JACK GREENHALGH, "The Strange Mrs. Crane," with Marjorie Lord, Pierre Watkin.
- BENJAMINE H. KLINE, "Tucson," with Jimmy Lydon and Penny Edwards.
- ERNIE LASZLO, "Some Rain Must Fall," with William Bendix and Dennis O'Keefe.
- JOE BIROC, "My Dear Secretary," with Laraine Day, Kirk Douglas, Keenan Wynn and Rudy Vallee.
- WINTON HOCH, "The Three Godfathers" (Technicolor), with John Wayne, Pedro Armendariz, Mae Marsh.
- FRED JACKMAN, JR., "The Unbelievable" (Cinecolor), with Virginia Grey, Phillip Reed.
- GEORGE ROBINSON, "Indian Scout," with George Montgomery and Ellen Drew.
- JACKSON ROSE, "Bungalow 13," with Tom Conway, Margaret Hamilton.

## Metro-Goldwyn-Mayer

- HAL ROSSON, "Command Decision," with Clark Gable, Walter Pidgeon, Van Johnson, Brian Donlevy.
- CHARLES ROSHER, "Words and Music" (Technicolor), with Judy Garland and Mickey Rooney.
- RAY JUNE, "Sun In The Morning" (Technicolor), with Jeannette MacDonald and Lloyd Nolan.
- ROBERT SURTEES, "Act Of Violence," with Van Heflin, Robert Ryan and Janet Leigh.
- JOE RUTTENBERG, "The Bribe," with Robert Taylor, Ava Gardner and Charles Laughton.
- CHARLES SCHOENBAUM, "Little Women," with Janet Leigh and Robert Ryan.

## RKO

- J. ROY HUNT, "Brothers In The Saddle," with Tim Holt, Richard Martin and Carol Forman.
- ROBERT DEGRASSE, "Baltimore Escapade," with Robert Young, Shirley Temple and John Agar.

## Monogram

- HARRY C. NEUMAN, "Silver Trails," with Jimmy Wakely and Christine Larson.

## Paramount

- DANIEL FAPP, "Sorrowful Jones," with Bob Hope, Lucille Ball and Mary Jane Saunders.

## Twentieth Century-Fox

- JOE MACDONALD, "Yellow Sky" (Technicolor), with Gregory Peck and Anne Baxter.
- ARTHUR MILLER, "Letter To Three Wives," with Jeanne Crain, Linda Darnell, Ann Southern, Jeffrey Lynn and Paul Douglas.
- HARRY A. JACKSON, "Chicken Every Sunday," with Dan Dailey, Alan Young and Celeste Holm.
- HARRY A. JACKSON, "Burlesque" (Technicolor), with Betty Grable, Dan Dailey and Jack Oakie.
- CHARLES CLARKE, "Sand" (Technicolor), with Mark Stevens, Coleen Gray and Rory Calhoun.

## Universal-International

- EDWARD CRONJAGER, "The Countess of Monte Cristo," with Sonja Henie, Olga San Juan and Dorothy Hart.
- RUSSELL METTY, "You Gotta Stay Happy," with Joan Fontaine and James Stewart.
- ARTHUR EDSON, "The O'Flynn," with Douglas Fairbanks, Jr., Helena Carter and Richard Greene.
- WILLIAM H. DANIELS, "Family Honey-moon," with Claudette Colbert and Fred MacMurray.
- FRANK PLANER, "Criss Cross," with Burt Lancaster and Yvonne DeCarlo.
- IRVING GLASSBERG, "Black Velvet" (Technicolor), with Ann Blyth and George Brent.

## Warner Brothers

- ERNEST HALLER, "My Dream Is Yours" (Technicolor), with Jack Carson and Doris Day.
- J. PEVERELL MARLEY, "Silver Lining" (Technicolor), with June Haver, Ray Bolger and Gordon MacRae.
- TED MCCORD, "June Bride," with Bette Davis and Robert Montgomery.
- CARL GUTHRIE, "Girl From Jones Beach," with Ronald Reagan and Virginia Mayo.
- CHARLES CLARKE, "The Younger Brothers" (Technicolor), with Wayne Morris and Janis Paige.
- SID HICKOX and WILFRED CLINE, "Fighter Squadron" (Technicolor), with Edmond O'Brien and Robert Stack.
- ELWOOD BREDELL, "South of St. Louis" (Technicolor), with Joel McCrea, Alexis Smith and Zachary Scott.

## NOTICE TO A. S. C. MEMBERS

A general meeting and banquet for all members of the A. S. C. will be held at the Clubhouse in Hollywood Monday evening, July 12th, at 8:00 p.m. On that evening the A. S. C. will be host to special guests from Metro-Goldwyn-Mayer studios.

## 'BERLIN EXPRESS'

(Continued from Page 233)

cohorts, the scene becomes clear again and the action continues. The effect is startling in its originality.

In another sequence two characters, during the course of a fight, fall through the top of a huge beer vat and continue their struggle in the brew below. A third combatant stands atop the vat and watches them through the gaping hole which they made in falling. The shot of him taken from below shows him framed by the jagged hole, his height exaggerated by the steepness of the angle. The overall effect is a striking and dramatic composition.

In the climactic sequence of the picture, Merle Oberon and Robert Ryan stand talking in the compartment of a train just as it is preparing to pull out. Through the window of their compartment, and reflected intermittently by the windows of a train passing on the adjacent track, the audience can see Charles Korvin attempting to strangle Paul Lukas, the struggle apparently taking place in the compartment adjoining that occupied by Ryan and Miss Oberon. In order to create this special effect, the struggle between Korvin and Lukas was first photographed in a straightforward manner. Then this film image was reflected into the windows of a passing miniature train and re-photographed as an enlarged process background. The resulting composite background was projected outside the train window in the conventional manner and the action of Ryan and Miss Oberon photographed against it. The effect on the screen is uniquely original.

In suspenseful, entertaining "Berlin Express," Lucien Ballard proves again that the imaginative and resourceful cinematographer doesn't always need the conveniences of a Hollywood studio to turn out a first rate job of photography.

## MOVIES FOR MONEY

(Continued from Page 237)

For instance, there are golfers, swimmers, tennis players and high school and college athletes who can improve their form and technique when aided by analysis films made of them in action. Ath-



letic coaches can be sold on the idea—and many of them already are—of having analysis films made of every grid game as an aid to improving team play. Many realtors—to take another field—are selling homes nowadays by screening movies of available properties for prospects in a cozy miniature theatre which is usually part of their offices. And there are other possibilities, too numerous to mention.

Marion Schwerman was watching a group of youngsters swimming in a pool one day in his home town of Mundelein, Illinois. They were learning to dive and despite their instructor's patient coaching, the kids couldn't get the right arch to their dives. Of course the coach couldn't make them see what they were doing wrong, but Schwerman knew that movies could; so he offered to shoot a fifty foot roll of film of the kids in action so they could study it.

First he made shots of the youngsters diving, with his camera turning at normal speed; then he set the camera to shoot at 32 f.p.s. for moderate slow motion, and filmed the divers from a number of angles. When the film was returned from the laboratory, he arranged to screen it before the young divers and their parents who gathered together with the coach. The coach was highly enthusiastic, and as the film was run off the fourth and fifth time, he pointed out the various errors to his students and suggested how to improve their form. This demonstration resulted in an assignment to make movies of other swimming classes and Schwerman presently found himself and camera in the business of making movies for money!

This venture led Schwerman to explore other fields of sport. He found that golfers could use form movies to a great advantage to improve their stance, swing and general performance. Sometimes these movies would be made extemporaneously, sometimes by following a shooting script which was prepared after consulting the coach or player to determine their needs.

Another 16mm. cine photographer who has turned his hobby into a lucrative part-time business is Richard V. Thiriot of Salt Lake City. While Thiriot was employed in a local photographic store, coach Ike Armstrong of the University of Utah came to him one day and asked if he knew of an experienced 16mm. movie maker who could take over the job of filming the college's grid games. Thiriot naturally said yes and identified the filmer as himself, and the next week he was set up with his camera atop the grandstand, shooting one of the big conference games.

"Never having made any football pictures before," said Thiriot, "I shot what I thought coach Armstrong would want, and then hoped. The pictures turned out pretty good and the day before the next game, Ike called and asked if I would make pictures again. He made several

suggestions which helped me to improve results. The university furnished the camera and the film. They had a 63mm. f/2.7 lens on a Cine Special which proved quite satisfactory, as all the games were played in the daytime. I completed the season assignment using their equipment and film.

"Before the next football season rolled around I approached the coach with the suggestion that I use my equipment and furnish the film, title the pictures and deliver to him a finished picture of each game for the entire season at a specified price. The College accepted my proposal and I proceeded to gather together enough film for the entire season. At that time all types of film were scarce and I was constantly searching for film at drug stores, and any other place I could find it."

The making of football analysis films is not necessarily confined to 16mm.; the 8mm. camera can serve this purpose equally well, where screening requirements are not great.

In the embryonic stage of providing motion picture programs for television, numerous opportunities have opened up for experienced 16mm. photographers with good cameras and lens equipment. Several firms who were among the first to get into this field have advertised for and made many contacts with 16mm. cameramen throughout the country who have supplied much of the material that has been seen to date in television newsreels.

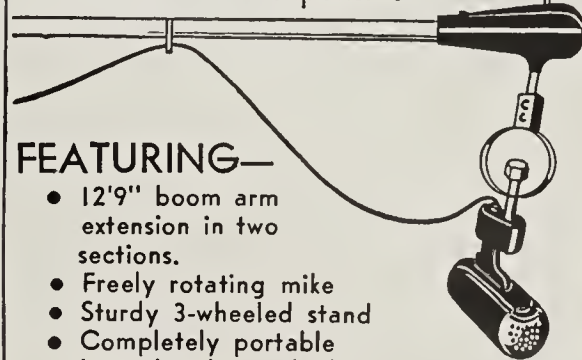
George Kirstein of New York City has received several assignments from a west coast television newsreel producer to provide footage of local events. "The first subject that I filmed," said Kirstein, "was the Frost Bite Races, an annual winter event of the Manhasset Yacht Club on Long Island. True to the event's name, the races were held on one of the coldest days of the year! The job of photographing them was comparatively easy. I arrived at the club in the morning to plan my shooting and get my equipment ready for action. I started to shoot at one o'clock as the yacht club members started to haul out the small boats, after hacking through two feet of snow and ice—all of which was recorded on film. After the boats had been placed in the icy water, I made intimate shots of principal contestants, showing them hauling up sails, tying knots, etc. All this in closeups, of course, according to the established requirements of television.

"For action shots of the races, I set up my camera aboard the crash boat and filmed, in all, 200 feet of 16mm. Kodachrome. This was promptly air-expressed to the newsreel company, of which 125 feet were accepted and paid for—not bad for one day's work."

There are numerous other 16mm. cameraists who have had similar opportunities come their way. One, quite accidentally, saw an advertisement in his local news-

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paper soliciting services of an experienced "amateur movie photographer." He answered the ad and found that the company, a large mid-west manufacturer of machinery, especially wanted a movie maker from the amateur ranks because they felt he would have a fresh viewpoint and would more likely show greater initiative and imagination than some of the professionals they had previously employed. The amateur screened some of his prize-winning films and as a result was made the company's "one-man motion picture production staff."

In Los Angeles, two 16mm. movie makers are currently supplying realtors with movies of homes listed for sale. They photograph listed homes inside and out and title the film with pertinent data, supplying it to the realtors ready to screen.

Still another Southern Californian puts his 16mm. camera to good use during the football season, shooting the big conference games in the Coliseum in color for a leading Los Angeles clothier. The films are then screened daily in a cozy projection room adjacent to the young men's clothing section, as a special attraction for patrons of the store. The innovation is announced prominently in the company's newspaper advertisements, and it has met with such success the company plans to make it an annual fall event.

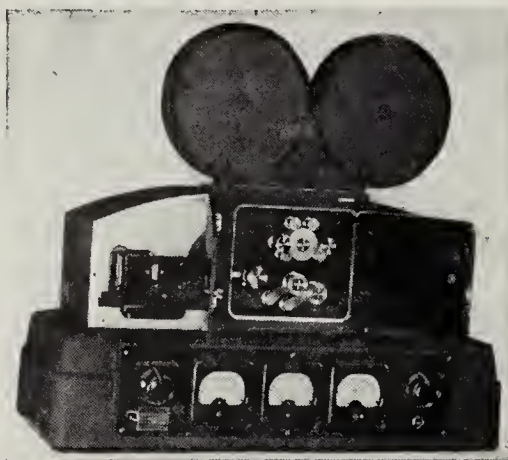
If you have attained a degree of perfection in your cine photography, similar opportunities probably await you in your community, too. If you would like to investigate the possibilities, why not explore the same fields which Marion Schwerman and the others did in their home towns?

Your camera equipment, of course, will have something to do with qualifying you for such work. Obviously 16mm. is the most desirable medium, although analysis films of grid games and form movies made to order for golfers, swimmers and other athletes are just as effective in 8mm. Your camera should afford speeds of 32, 48 and 64 frames per second, as well as 16 f.p.s., in order to provide slow motion and ultra slow motion studies. For shooting grid games a three or four inch telephoto lens is a must for 16mm. cameras, and the equivalents for 8mm. cameras.

You should provide yourself with a good photo-electric exposure meter, and if you plan to shoot color film exclusively, then add a series of color filters to your kit of accessories. Do not overlook a polar screen or polarizing filter. You'll need it before your lens when shooting pictures of divers and swimmers in order to subdue light reflections from the water. Last but by no means least, buy a good solid tripod with a pan head, and use it in making every shot. Steady pictures on the screen invariably mark the work of the experienced and professional cameraman.

# WHAT'S NEW

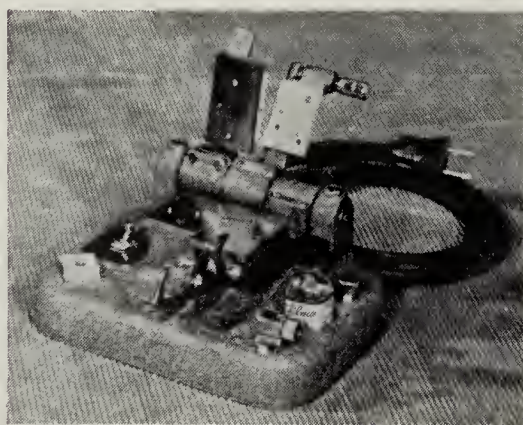
## in equipment, accessories, service



### 16 mm. Equipment

A low-priced professional 16 mm. film recorder is the "Cine-Pro Sixteen" offered by Cine-Pro Corporation, 106 West End St., New York 23, and recommended for television, film sound recording and general motion picture studio use. Manufacturer claims simplicity of operation, high fidelity V.A. recording, noise reduction, visual monitoring target, and ability to produce excellent sound tracks on either negative or positive stock.

A companion piece to the recorder, also announced by this company, is the "Cine-Pro Sixteen Film Phonograph" for playback or for use as a dubber. It can be set up in batteries of two or more for re-recording. High fidelity reproduction is guaranteed. A special two-speed model is also available affording use of magnetic tape recordings with any existing motion picture camera equipment.



### Semi-professional Splicer

A combination of 8mm. and 16mm. Semi-professional Splicer for heavy duty use in schools, film libraries, and laboratories has been announced by Bell & Howell Company, Chicago.

In one operation, says B&H, the new splicer shears both ends of the film diagonally and applies pressure to the film ends while they are being cemented. An electrical element in the base, operating on AC only, heats the shear blades, thus shortening cement-setting time.

In addition to the usual provision for scraping emulsion from the left-hand end, the right-hand shear blade and arms of the new splicer are designed to permit scraping the emulsion from the right-hand film end, a process necessary for splicing certain types of prints and titles. Splicer is 6 $\frac{3}{4}$ " x 5 $\frac{1}{2}$ " x 3 $\frac{1}{2}$ " and weighs but three pounds.

### Automatic Dissolve

Joseph Yolo, 5968 Santa Monica Blvd., Hollywood, is again in production on his Automatic Dissolve Attachment for the Cine Kodak Special. Device, which attaches readily to camera and functions from the winding crank shaft, provides accurate manipulation of the camera's dissolving shutter lever to effect smooth fade-ins and fade-outs. What results, in making a dissolve, is that both fade-out and fade-in occupy the same number and the same identical series of frames, producing a genuine professional dissolve. Price of current model is \$49.50.



### New Floodlights

Two new, multi-purpose flood lamp reflectors, which may be adjusted to provide flood or semi-spot lighting or any type in between—have been announced by the Eastman Kodak Company.

Known as Kodak Vari-Beam Standlight and Kodak Vari-Beam Clamp-light, reflectors feature built-in lamp socket which, when rotated, will change the angle of light. Lamps may be adjusted, by a simple turn of the control ring, to any point from a wide beam for over-all illumination, through a moderately narrow beam for more concentrated lighting and moves to a narrow spotlight-type beam for high-lights and other special effects.

Made of light-weight spun aluminum, 12 inches in diameter, reflectors are finished with a semi-matte surface to insure proper diffusion of the reflected light. The lamp socket in each case will accept one No. 2 flood lamp. A ball-and-socket swivel



mounting permits positioning to any angle, and a handle is provided for ease in use.

Standlight is mounted on a telescoping column, locked in place by tightening a thumb screw. The Vari-Beam Clamplight has a positive C-type felt-padded clamp which may be quickly attached to flat objects, such as chair backs and table tops, etc. Price of Standlight is \$15.00; of the Clamplight, \$9.75.



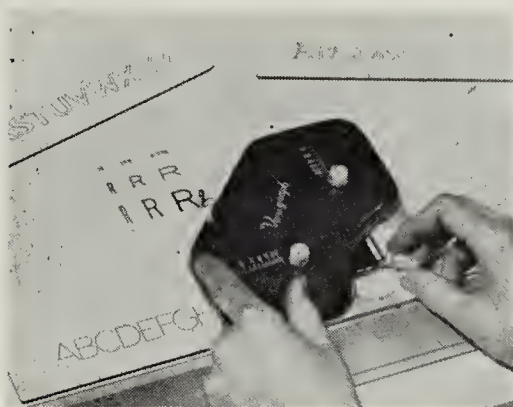
### Kryptar Movie Film

A new 8mm. black-and-white panchromatic film for home movie makers has been announced by Kryptar Corporation, Rochester, N.Y.

Kryptar 8mm. Panchromatic Motion Picture Film, packed in 25-foot daylight loading rolls, will be distributed nationally by the Curtis Circulation Company of Philadelphia, national distributor of Kryptar roll film.

The new film has a daylight exposure index of 50 and can be used effectively for both indoor and outdoor pictures. It is a new film product, manufactured in 1948

from new, fresh materials, and perforated expressly for 8mm. cameras. Processing at one of the three regional laboratories is included in purchase price of film. Mailing addresses of Kryptar processing laboratories are as follows: Eastern Laboratory, P. O. Box 29, Rochester, N.Y.; Mid-western Laboratory, 1501 Troost, Kansas City 8, Mo.; Western Laboratory, P. O. Box 271, Hollywood 28, Calif.



### For Title Making

The Varigraph Lettering Instrument is offered amateur movie makers and producers of films in the 16mm. professional field for lettering title cards neatly and quickly. Used for years by draftsmen, architects, commercial artists and others, the Varigraph is a small mechanical device that reproduces many sizes of letters from a single template directly in ink or pencil on any suitable surface. The letters may be reproduced to any desired width combined with any desired heights between .075 and .750 of an inch. Instrument can be used with equal ease by either right or left handed person. Manufacturer is Varigraph Company, 2715 Vine St., Lincoln 3, Nebraska.

## KEEPING UP WITH PHOTOGRAPHY

(Continued from Page 226)

qualified recruits are needed every five years, the figure quoted for the actual likely intake of trainees, including photographers, is below 100.

### Temperature Filter

A new type of glass filter, developed in England, provides a precise means of increasing apparent color temperature. Color difference between a light source so modified and a Planckian radiator at the higher color temperature can hardly be distinguished, even by an experienced observer; for example, a piece 1.6mm. thick will convert a source at 2250° K to 2870° K.

The filter, identified as Type 0 B9, is supplied by Chance Brothers, Ltd., London, in unpolished rolled sheet form and to a guaranteed micron coefficient in panels up to 8 inches square.

### Newsreels

Roughly 200 newsreel cameramen, their assistants and sound technicians were em-

ployed in covering the Republican convention in Philadelphia. Pathe's staff, for instance, was reported between 25 and 30. Hand camera crews played an even greater part in the coverage than ever before.

Pathe had a new and more powerful hand camera, developed during the war by a Warner Brothers' subsidiary. New model, powered by an electric motor instead of the conventional spring motor, takes 200 feet of film as against the former 100 ft. maximum, eliminating need for cumbersome and frequent reloading.

Paramount News reportedly will employ all its Zoomar lenses on cameras covering future convention activities.

### Pin Point Cinematography

Gregg Toland, A.S.C., has developed a new technique which he will use extensively in shooting his next Goldwyn picture, "Roseanna McCoy," which will allow only a pin point for light through the lens.

## BOOKS

You'll Want To Read

FLASH IN MODERN PHOTOGRAPHY, By Wm. Mortensen, Camera Craft Pub. Co., \$4.50

Studio still men and press photographers will find much of interest, besides the illustrations, in this 224 page treatise on the use of flash-lighting in modern photography. Sixty lighting diagrams augment the illustrations. Every phase of flash photography is covered with particular emphasis on personal record photography, portraiture, figure work, landscape and architectural photography, synchro-sunlight photography and a special section on electronic flash.

A supplementary section by Don M. Paul discusses the particular problems of documentary, press, movie stills, police, radio publicity, and industrial photography. The all-important problems of lighting and exposure are discussed and illustrated with particular thoroughness and the book makes a number of very valuable contributions in these fields.

★

PICTORIAL CONTINUITY, By Arthur Gaskill and David Englander, Duell, Sloan & Pearce, \$3.00

Gaskill, one of the best-known newsreel cameramen in the business before the war, and Englander, a former newspaperman and one-time editor of Screen Magazine, have provided the advanced movie amateur with an excellent handbook on the construction of motion pictures. It is the first book to break down the complicated technique of camera continuity and put simple means for achieving it in the hands of the amateur movie cameraman. Its 149 pages are amply illustrated to show pictorial examples of the simple sequence, the re-establishing shot, over-lap and matching action, cut-ins and cut-aways, and various angle shots. An instructive summary concludes each of the 13 chapters.

★

KODACHROME AND EKTACHROME, By Fred Bond, Camera Craft. Pub. Co., \$6.50

Both still and movie photographers, professional as well as amateur, will want to add this volume to their library of text books. Here is the first and certainly the most complete working guide on every-day problems in Kodachrome, Ektachrome and Kodacolor photography—stills and movies. There is no mystery about good color results, and this book tells how to get them, in non-technical suggestions. The book is an experience record. The author is one of the few photographers who has worked exclusively in Kodachrome from the day the medium was introduced; thousands of shots in 35mm., movies and cut film, under all kinds of conditions, provided facts for the book.

Movie photographers will find especial interest in the chapters, *Better Movies In Kodachrome*, and *Sunsets, Special Effects, Trick Shots*.

★

HOW TO TAKE INDUSTRIAL PHOTOGRAPHS, By Moni Hans Zielke and Franklin G. Beezley, McGraw-Hill, \$5.00

Zielke, formerly chief photographer, Allis-Chalmers Mfg. Co., and Beezley, formerly a member of the advertising department of the same company, have provided a book that will be of inestimable value to the industrial cinematographer as well as still photographers interested in this photographic field. In this book, which is illustrated with more than 100 photographs, offers solutions to the special problems facing those who photograph men and machines. The reader is told what factors must be taken into consideration and how he should apply these factors to get industrial pictures of the quality sought by advertising managers, agency executives, etc.



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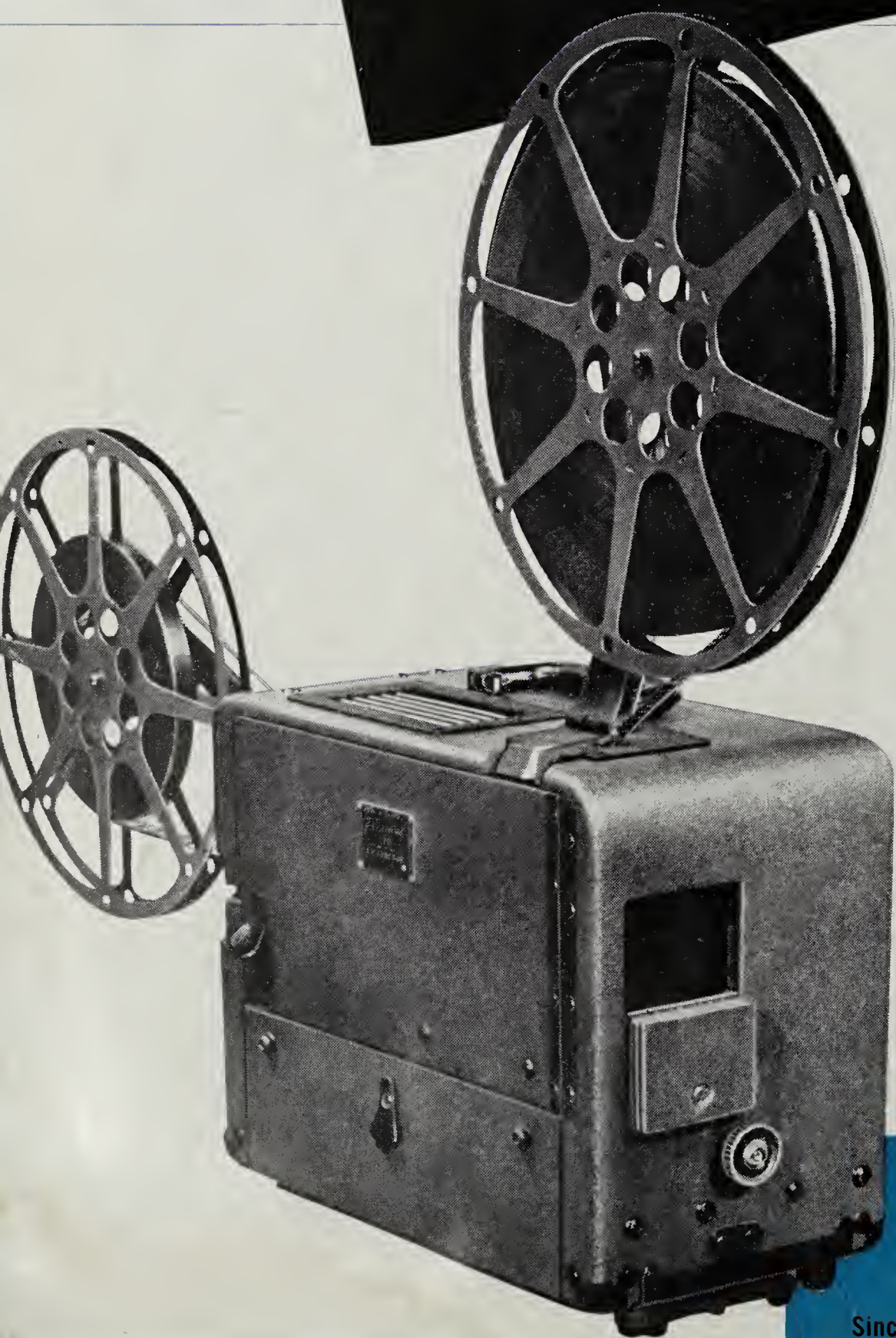
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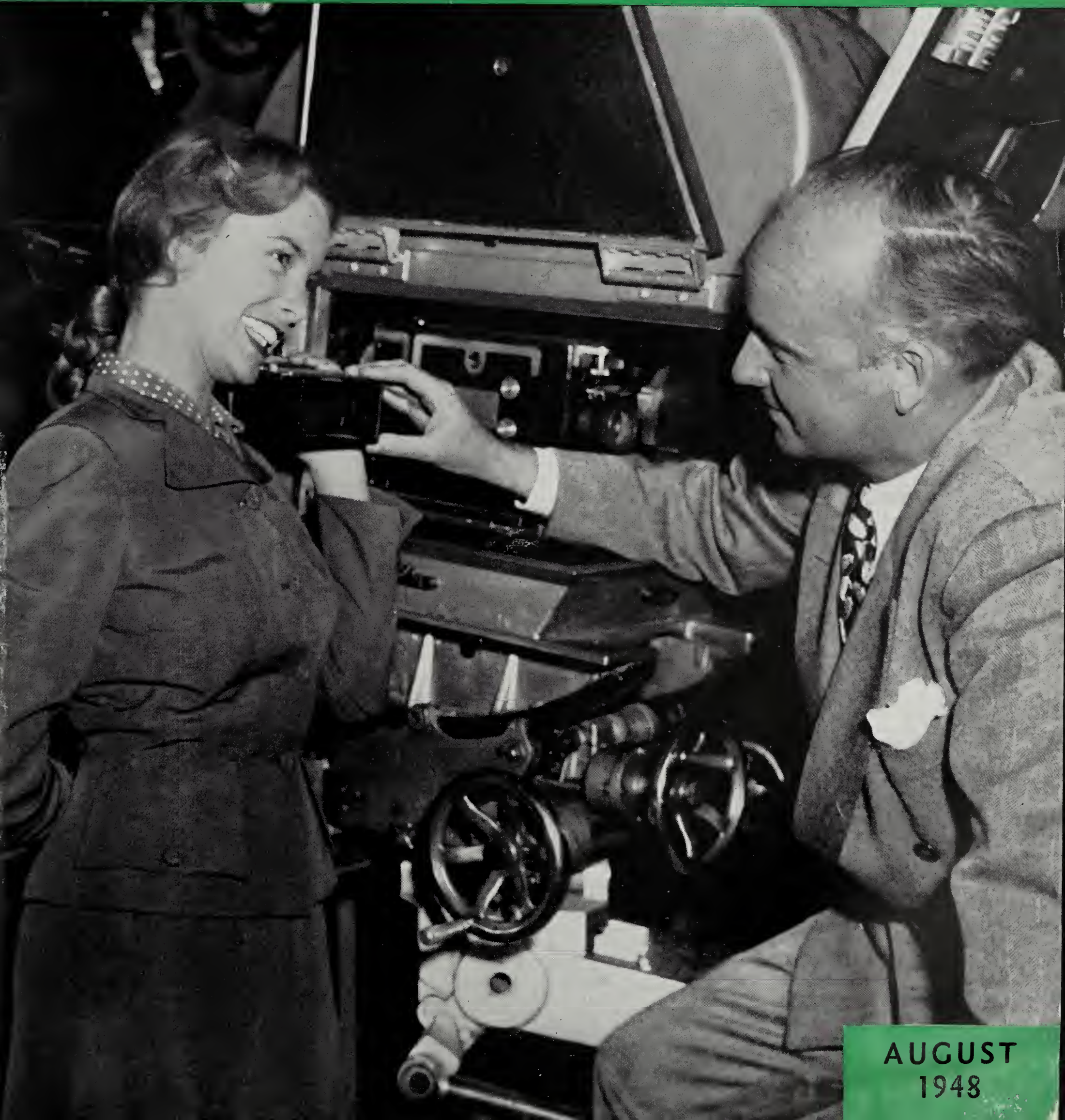


# AMERICAN *Cinematographer*

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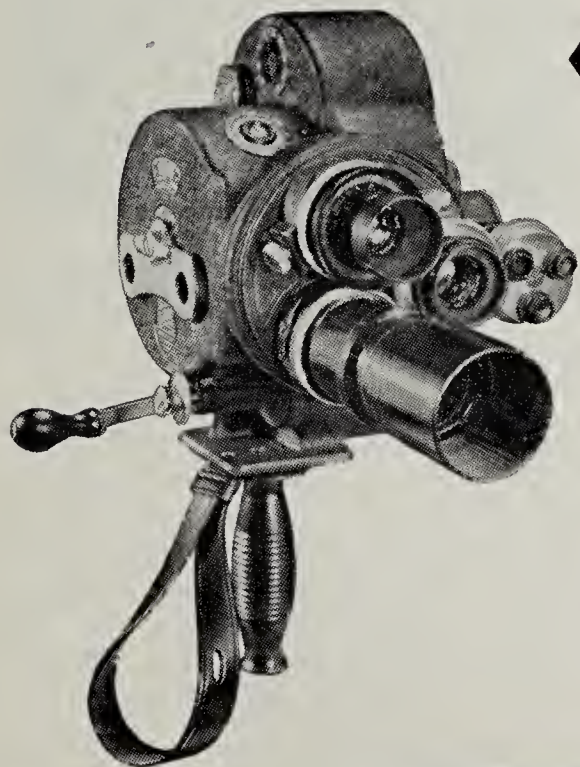
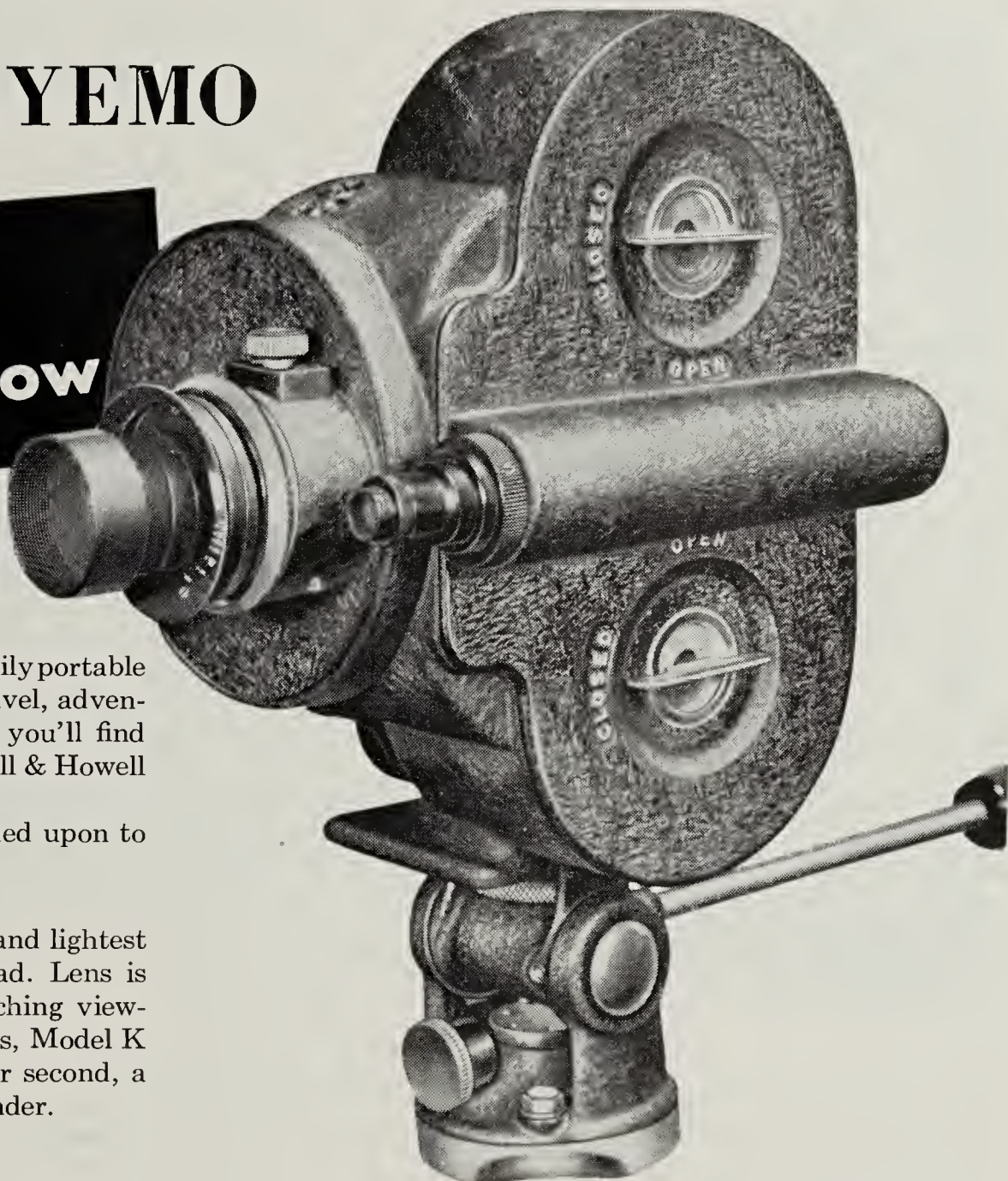
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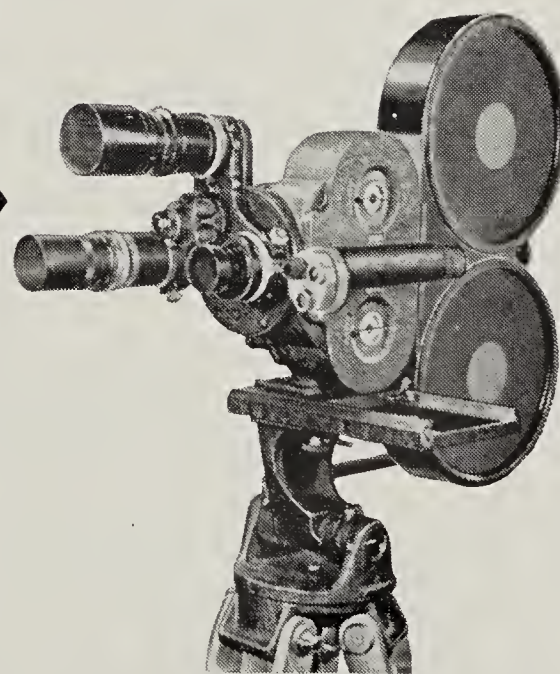


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# Hollywood

## Bulletin Board



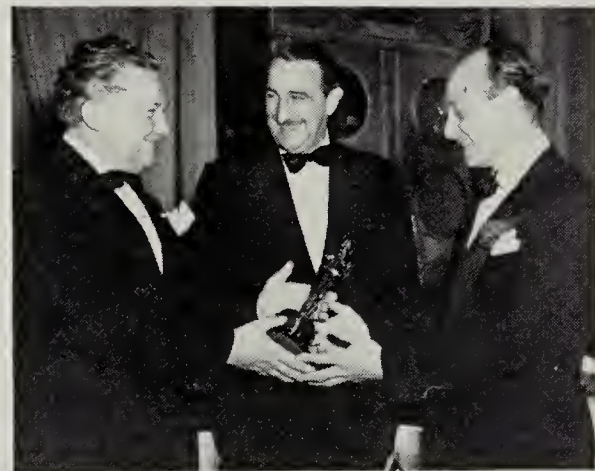
ARTHUR EDESON (left), presiding as president pro tem at the A.S.C.'s July banquet and meeting, corners screen star Gene Kelly (seated), director George Sidney, Bob Planck, A.S.C., and producer Pandro Berman—all of M-G-M—for their signatures in the Society's guest book. Kelly, Sidney and Berman were guests of honor.

LEN ROOS, A.S.C., in association with the Hallen Development Company, Burbank, Calif., has developed a new portable magnetic tape recorder that utilizes flux coated 16mm. film. Recorder can be interlocked with 35mm. or 16mm. sound cameras for recording sound, and provides a sound track that can be immediately played back. This feature also makes the recorder particularly useful for television newscasting. Recorder mechanism is gear driven and will remain in synchronization with any motion picture camera equipped with a synchronous drive.

TOM TUTWILER, A.S.C., in Nome, Alaska, on an aerial shooting assignment for Apex pictures, has been grounded the past several weeks because of bad weather. Earlier, he had been in Greenland for the same company. Regarding the footage he shot there, Harry Poppe, of Apex, recently wrote Tutwiler "Yesterday we ran off two and a half reels of the film you shot. Believe me, it is the most profound, awe-inspiring and beautiful material of its kind I have ever seen on the screen."

Tutwiler has still about two months of "air stuff" to do in Nome, then goes into a ground picture elsewhere in Alaska. He reports he's "booked solid" until about arch, 1949.

**HYPERSENSITIZING** its film has enabled Cinecolor to reduce production costs of films made in that medium, so that



JEAN HERSHOLT, Pres. of Academy of M. P. Arts & Sciences, on recent visit to England personally presented Jack Cardiff, A.S.C. (right) with "Oscar" he won for best color cinematography for 1947 ("Black Narcissus"). On hand to congratulate Cardiff was J. Arthur Rank (center).

today shooting in Cinecolor costs but 10% more than producing the same film in monochrome. Cinecolor executives revealed the new development at a recent banquet honoring members of the motion picture industry's Art Directors Guild. While the company's president refused to

(Continued on Page 289)

## IN MEMORIAM

David Wark Griffith

in appreciation for his great contributions to the art and advancement of cinematography.

THE AMERICAN SOCIETY OF  
CINEMATOGRAPHERS



... credit the  
man, too.

IT IS POSSIBLE, we believe, for cinemagoers to want to know who photographed a motion picture, just as they are also interested in who directed it. For just as they have come to know that the name of Hitchcock on a picture means guaranteed entertainment, many also know that certain Directors of Photography have well established reputations for imparting extraordinary pictorial quality to a picture.

Whether or not the time will come when the Director of Photography's name will receive equal billing in reviews, in advertisements and on billboards, we do not know; but it seems that there is every justification for film critics to give more than passing recognition to the artistry of the Director of Photography when writing the review of a picture.

A case in point is "Fort Apache," which is chiefly notable for its unusual dramatic photography by Archie Stout, A.S.C. Recently, motion picture critics on the New York dailies in reviewing this picture acclaimed the photography but omitted mentioning Stout's name, although names of the producer, writer, stars and the director came in for the usual comment.

One of the dominant aims of the A.S.C.'s public relations department, henceforth, will be to make the members of the fourth estate as conscious of the artist behind the camera as they are of the camera itself.



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THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

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### ON THE COVER

DURING a lull in the shooting of "Act of Violence," at Metro-Goldwyn-Mayer studios, Bob Surtees, A.S.C., chats with Janet Leigh, star of the picture and one of M-G-M's brighter luminaries. Surtee's story on the many unusual production angles of the film begins on page 268 of this issue.

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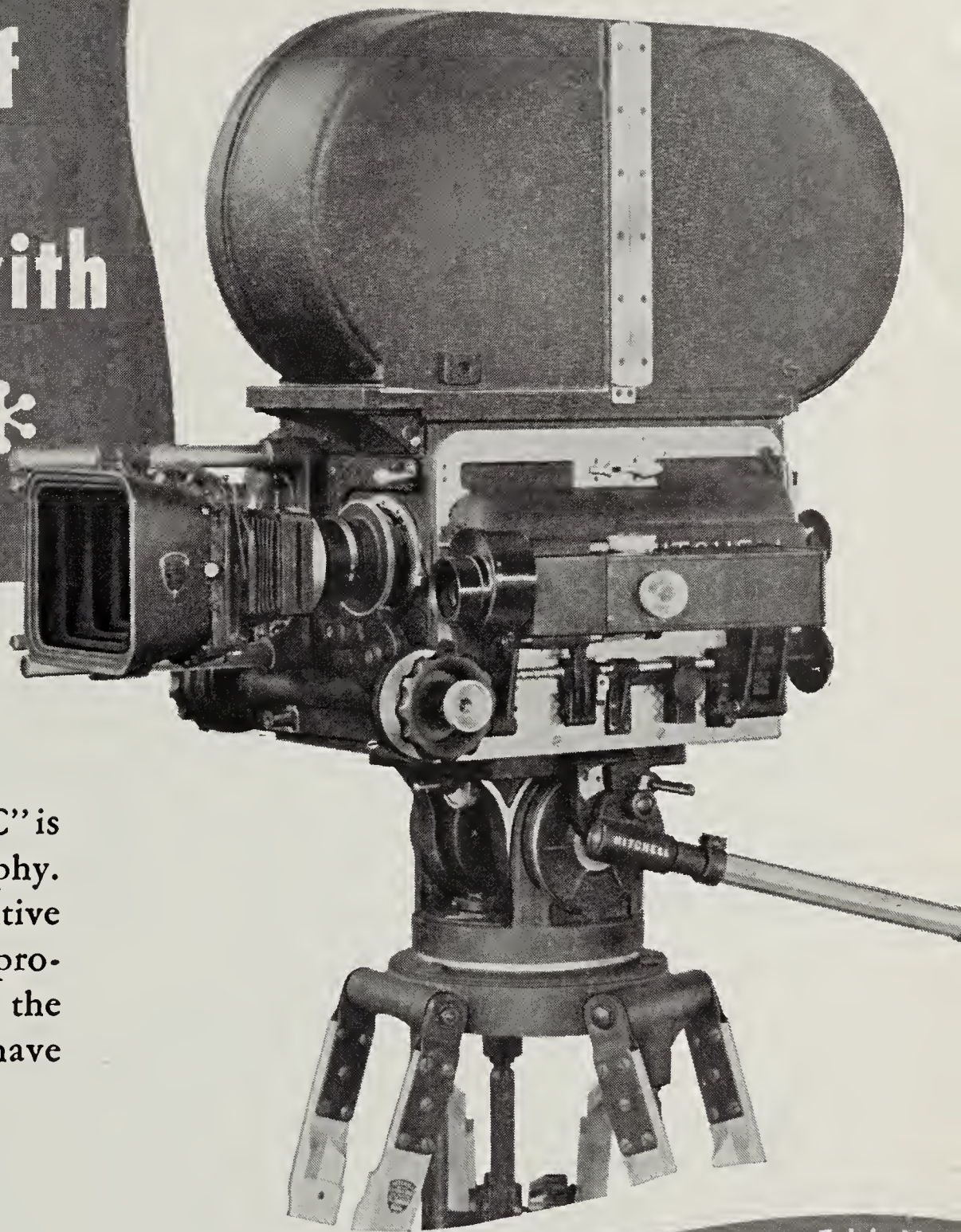
In the opening scene of the film Director Negulesco wanted to establish the point that the locale of the story was a cliff-lined island. The helicopter simplified his problem. Ivano and Flint followed the course of a wave into shore. Then as the helicopter neared the cliff-lined beach the plane rose to the top of the cliff, catching the whole action on film. In another sequence Ivano and Flint hovered above a small fleet of fishing boats as they came into Noyo Harbor near Ft. Bragg. The cameraman on the docks picked up the action of the boats as they dropped anchor. Most of the scenes were shot in

His discovery of a large variety of sensitizing dyes brought a tremendous change in photography. Production of an improved panchromatic film was possible. Film could be made with almost any type of special sensitivity.. Dr. Brooker's research made Kodachrome film possible because it provided the dyes for sensitizing various layers in color films. ★ ★ ☆

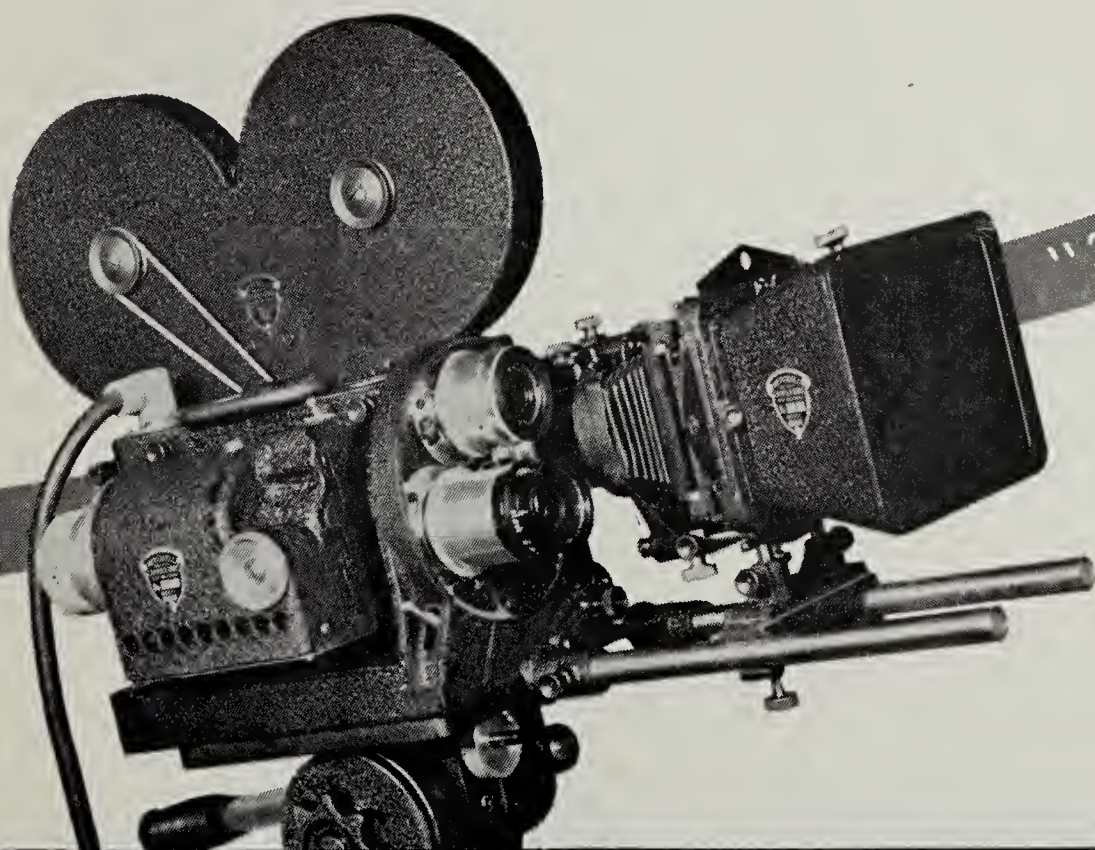


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TWO SCENES from "Fort Apache," produced by Argosy Pictures, which demonstrate the striking pictorial effects achieved by use of infrared



film and filters. All dramatic night shots in the picture were made with this film. Brown makeup and lipstick were used in the closeups.

THE NATION'S movie critics who have been so generous with praise for the photography in "Fort Apache," and the millions of cinemagoers who have seen the film to date probably do not know that a total of 10,000 feet of infrared film went into making the dramatic outdoor sequences that mark the picture.

In all probability there is more actual infrared footage in "Fort Apache," (2,800 feet in the final cutting) than in any other theatrical production released to date.

The uses for infrared film are as varied as the types of present day pictures. It affords the progressive cinematographer many opportunities to achieve striking dramatic and pictorial effect shots that can be made in no other way. At the same time, it permits carrying on smooth continuity of photography by using the same film in medium and closeup shots.

John Ford's "Fort Apache," with so much of its action laid in the pictorially beautiful region of the great southwest, was particularly suited to the use of infrared film. The vast expanse of blue, cloud-flecked sky, when emphasized by use of this film and filters, provides a dramatic backdrop for the story's teeming action.

Normally, I found that the most advantageous light conditions for shooting infrared is a cross or slightly front cross light, using a stop of  $f/5.6$  to  $f/8$  and a 25A filter. Of course, this is not a definite

## DRAMATIC PICTORIALISM WITH INFRARED FILM

**Archie Stout, who filmed "Fort Apache," tells how infrared made possible the unusual dramatic day and night shots which feature the picture.**

By ARCHIE STOUT, A.S.C.

rule, but will give a working start that your test box can prove or disprove in ten minutes, and result in making corrections to suit one's needs.

It may be interesting to note that the dawn sequence in "Fort Apache" in which the troops are seen moving across the desert was shot while a light rain was in progress, using a 29F filter and a stop of  $f/3$ , indicating that the film is not restricted to use only in brilliant sunshine.

Probably the reason more Directors of Photography have not used infrared film more often is the fact that much of the first infrared was marked by unstable balance. For example, two rolls of early day infrared film shot at the same  $f$ /stop and under the same conditions—and within

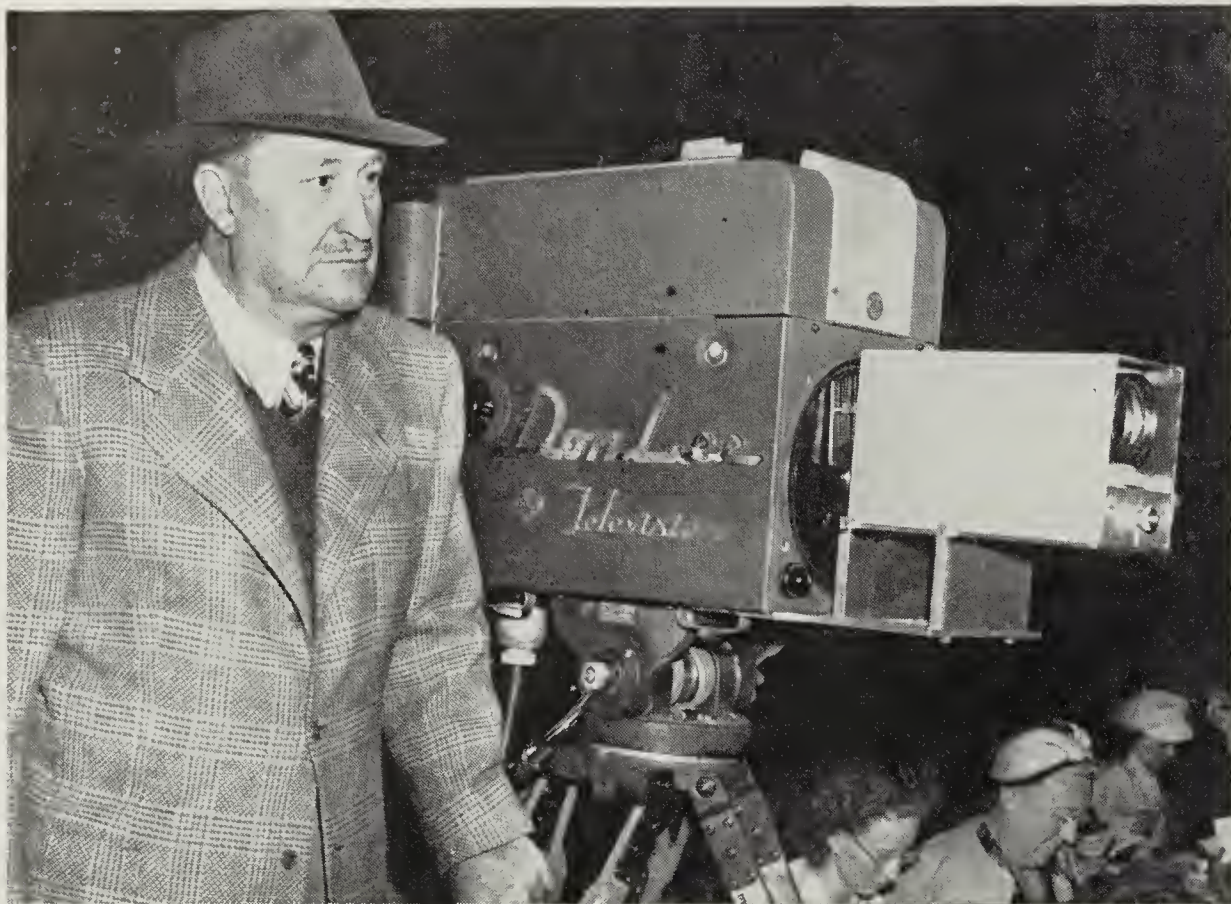
an hour—would have a very wide difference in density; so much so, that they would be practically unusable. Such hazards do not prevail with present day infrared film. The density of the 10,000 feet used in "Fort Apache" remained quite constant throughout.

Other cinematographers may be interested in pertinent facts concerning this far too little used film stock, some of which were obtained only after considerable trial and error:

In shooting closeups in which players appear, a very light brown makeup should be used in combination with dark brown rouge for the lips, instead of the customary red. The brown makeup prevents

(Continued on Page 289)





JOE WALKER, recently dubbed the "inventingest" cameraman in the motion picture industry, has come up with another lens innovation, this time for television cameras. Shown here, mounted before one of Don Lee's tele-cameras, the lens affords dissolves or quick cuts between two image sizes.

# TRANSITION LENS FOR TELEVISION CAMERAS

**The Duomar lens, developed by Joseph Walker, A.S.C., enables television cameras to make quick cuts from long shots to closeups.**

By FREDERICK FOSTER

**B**EFORE we tell you about the new Walker "Duomar" lens for television cameras, perhaps we ought to tell something about its inventor, Joseph Walker, A.S.C.

His various patent applications in the fields of optics and electronics take up sizeable file space in Uncle Sam's Patent Office in Washington, D.C. Walker has many patents on motion picture processes and equipment, but ruefully admits that only one ever brought him any real money. That was the patent covering a double exposure process using an imbibition print to form a travelling matt.

He also designed what was probably the first "zoom" lens for motion picture cameras in the early 1920's, although the term "zoom," as applied to lenses of this

type today, did not come into general use until sometime later. The European type zoom lens did not appear until many years afterward.

The Duomar is of different construction than the zoom type lens. It is essentially a lens with two fields of view, with the transition from one size image to the other being accomplished by simply moving a lever.

With customary modesty, Walker refuses to take all the credit for the idea for such a lens. The idea, he says, stemmed from a query posed by John H. Buffum, now a well known Boston radio commentator, in whose employ he worked as a newsreel cameraman many years ago.

"Joe," said Buffum, "I want you to develop something that will permit making

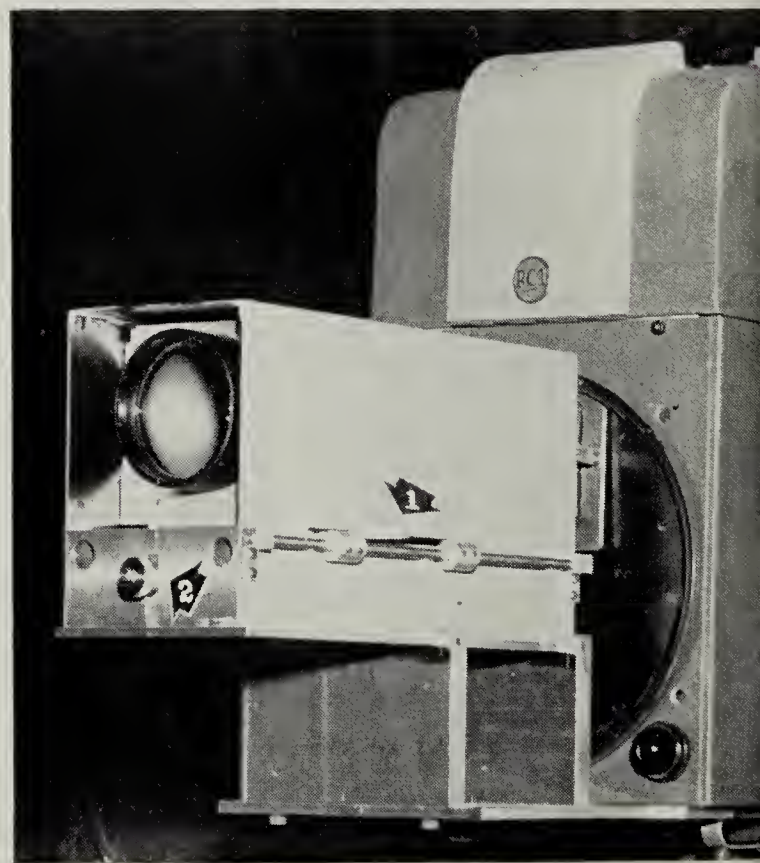
a quick switch from a long shot to a closeup, and vice versa — perhaps two cameras and lenses in a single unit, or better yet, two lenses of different focal length mounted on the same camera with some means of instantly changing from one lens to the other without stopping the camera."

Walker was using a Williamson camera at the time and he soon had a method figured out that would achieve the result suggested by Buffum. The camera featured an extra long aperture plate and film gate. Walker cut an extra aperture in the plate and fitted a telephoto lens immediately above the regular camera lens, so that it would register an image on the film two frames above that of the regular lens. A sliding shutter was installed in the camera so that the aperture behind one lens could be closed simultaneously as the other was opened.

Thus to make a quick switch from a long shot to a closeup, a button was pressed as the cameraman continued cranking, and the sliding shutter cut off the image from the short focal lens and opened the aperture behind the telephoto lens, permitting it to register an image on the film. The resulting blank frame between the switchover (or the single double-exposed frame, resulting when the switch was from closeup to long shot), was deleted at time of editing the film.

Walker had the first opportunity to put this idea to practical use when filming newsreel shots of President Wilson's inauguration. The event was a natural for demonstrating the effectiveness of this new cinematic innovation. Walker had his regular lens focused on the President

*(Continued on Page 287)*



TRANSITION is effected by moving lever (indicated by arrow 1) on side of lens. Manual operation is soon to be replaced by electric remote control. Centering knob (arrow 2) affords adjustment of lens so it will automatically center on subject or scene when switched from long shot to closeup.



# THE NEW "SPECTRA" MEASURES COLOR TEMPERATURE

A radically new direct-reading color temperature meter, developed by Karl Freund, A.S.C., takes the guess work out of light analysis.

By FRED GATELY

A NEW STAR has been born in the photographic firmament—one whose destiny is to remove the final vestiges of guess work and mental gymnastics from the art of color photography. It is the Spectra, a direct-reading color temperature meter, designed and built by Karl Freund, A.S.C., and his Photo Research Corporation.

The term "color temperature" will do doubt imbue many with the feeling that we are dealing with an esoteric subject in the realm of physics. In the lexicon of the scientist, color temperature of a given source is the temperature to which a radiant black body must be raised to radiate the same spectral distribution of light. For the physicist who must deal with specifics this is a necessary definition; from the practical standpoint of the photographer who must deal with the color temperature problem as a routine phase of his work, it resolves itself down to "how yellow or how blue is my light?"

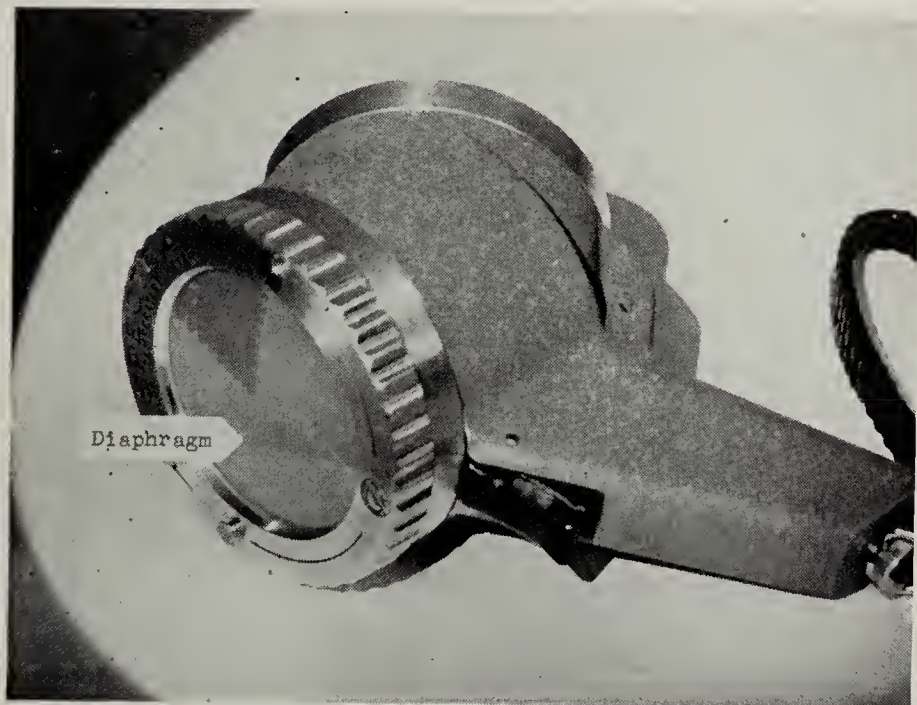
The synthesis of light is readily apparent in its wide variations to any observant individual. We have all noticed the distinctly red color of the sun either very early in the morning when it is rising or when it is about to set in the evening, and



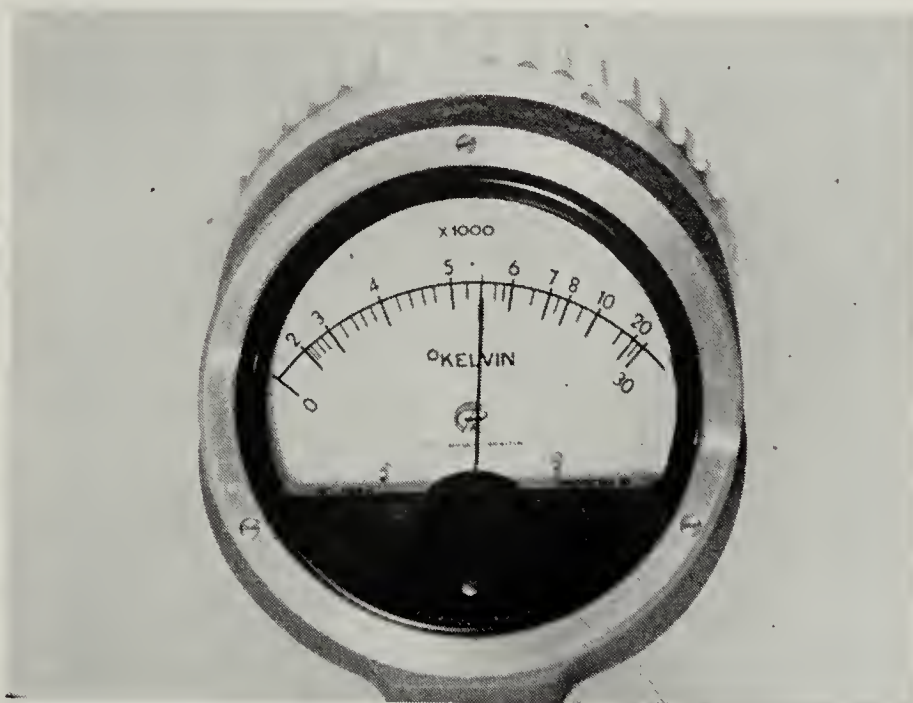
THE SPECTRA is used in the same manner as an incident light meter. It is merely a matter of pointing meter toward light source being examined, adjusting the diaphragm to the reference marker, squeezing the trigger, and taking the reading directly from the microammeter scale.

have seen how objects illuminated by the sun at that time have a distinctly reddish cast. We have observed a candle burning in a room illuminated by standard tungsten lamps, and accept as a natural thing that the candle seems yellow by comparison and, in turn, that the tungsten lamp will seem yellow in comparison with daylight if it be turned on in a room illuminated by windows. The tungsten lamp gives a light having a higher percentage of blue rays than candlelight, and the daylight has a higher percentage of blue rays than the tungsten.

In a thermal source the relative amounts of all wave lengths  
(Continued on Page 278)



A RED FILTER rests between the diaphragm and the photocell. Initial setting of meter indicator is based on red light rays passing through red filter to photocell. When trigger is squeezed, blue filter replaces red and the light thus admitted to photocell becomes the ratio between the blue and the red.



AFTER METER is pointed toward the light, diaphragm is adjusted until indicator needle rests on reference marker, as shown here. When trigger is squeezed, needle will move to left or right, depending on the color temperature, giving a direct reading. No additional calculations are necessary.



## ***The Story of Filming***

# **'ACT OF VIOLENCE'**

**Reflected lighting, no makeup, natural locations and use of a 28mm. lens for all shots are some of the new production trends explored in the making of this picture.**

By ROBERT SURTEES, A.S.C.

**M**UCH HAS been written lately about the trend towards realism in the photographic treatment of the modern "documentary type" motion picture play. Therefore it was with anticipation of doing something unusual and different that I faced the assignment of photographing the Metro-Goldwyn-Mayer production, "Act of Violence." Here was a cameraman's picture, an ideal story written by Robert Richards in such a manner that the Director of Photography could blend the best of the documentary technique with a more dramatic approach than has been possible in other pictures to date.

This story was real and at the same time more dramatic than the usual so-called modern film. It was the one great opportunity to go beyond the realist school and combine it with a more imaginative treatment. The producer, Mr. William Wright, and the director, Mr. Fred Zinnemann, were a constant and sympathetic pair to be associated with in this unusual experiment for Hollywood.

To understand fully one must know something about the plot of "Act of Violence." Briefly, it concerns the pursuit of Frank Enley; a former officer in the Air Force, (Enley was portrayed by Van Heflin), by a crippled ex-sergeant, Joe Jordan, (played by Robert Ryan). Jordan has only one purpose to live for and that is to kill Enley, because while they were prisoners of war together Enley had informed the Nazi Commandant of an escape planned by his buddies. All except Jordan had been shot in trying to carry through the plan. Jordan escapes and, after the war, starts searching for Enley who is now living as a respectable citizen in a small California city. Jordan finally catches up with him in Los Angeles and the hunted one escapes to hide among the derelicts of dead end streets like East Fifth, with all its human wrecks and winos.

During all this, Enley knows he did wrong and also knows his number is about up, and in a surprise twist at the finish of the story he saves the life of Jordan and, in doing so, loses his own. All this action was staged in and around Los Angeles and was mostly night exteriors

*(Continued on Page 282)*



ONE OF THE many "sets" used in "Act Of Violence" was the interior of this dwelling in Santa Monica. Here Director of Photography Surtees lines up his camera for a shot through the front door.

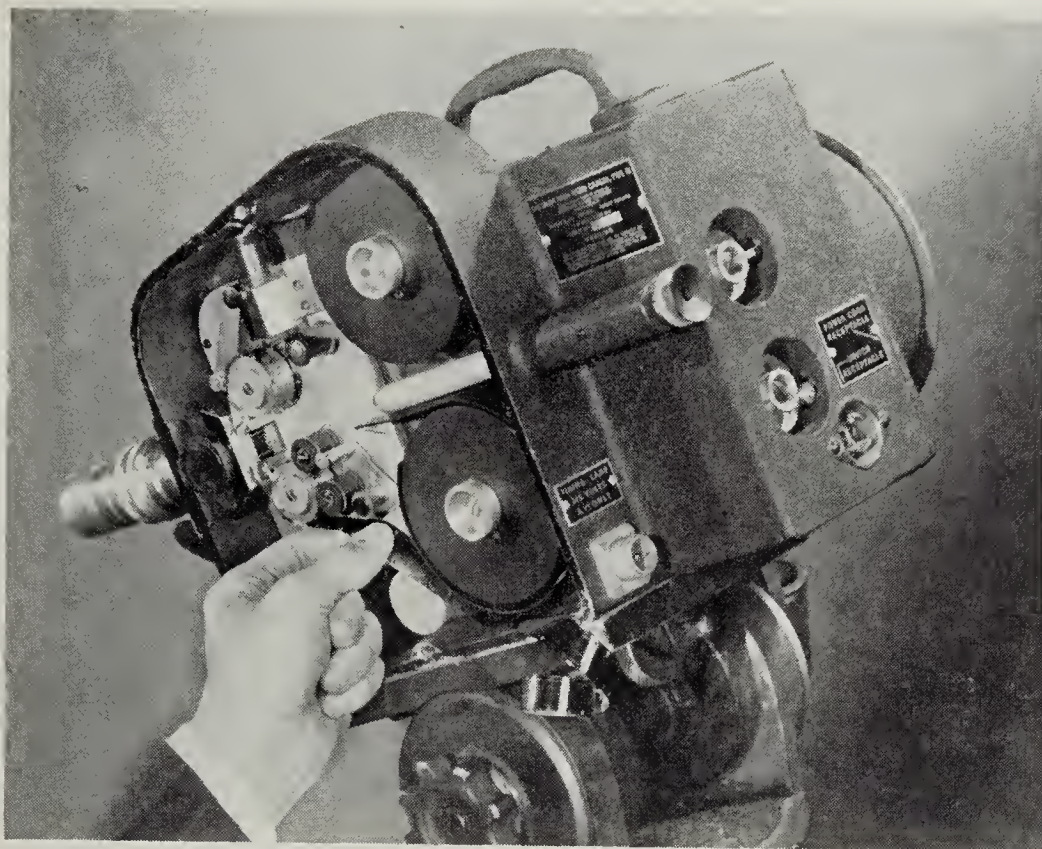


FOR A FOLLOW shot of Robert Ryan rowing a boat, two boats were lashed together and a platform laid over them to support camera and crew. An outboard motor supplied the motive power.

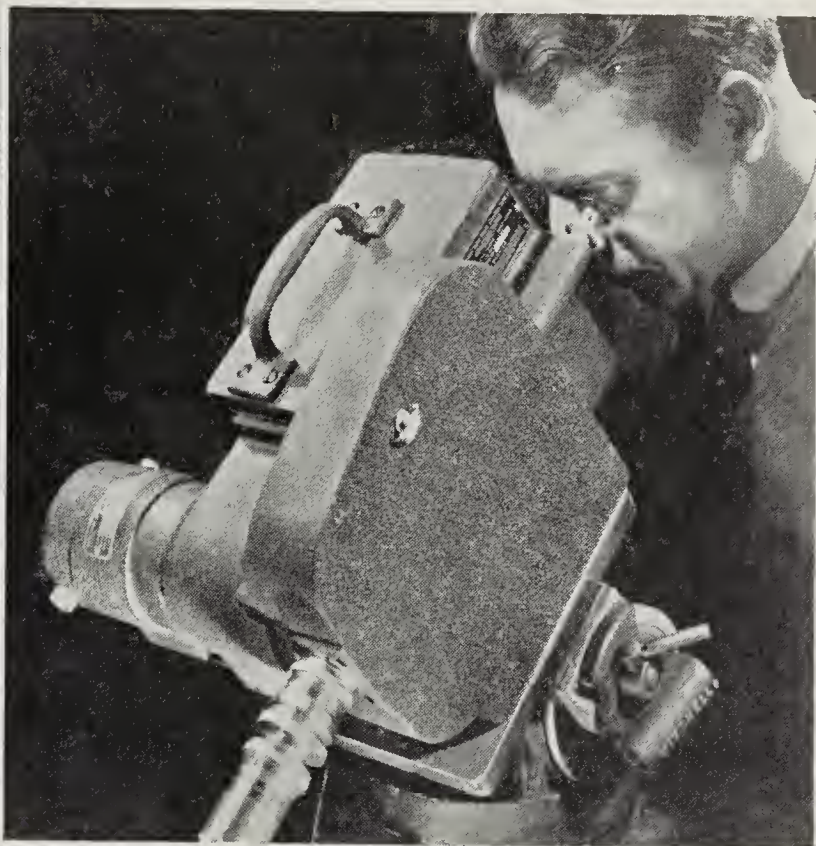


NOTE THE NATURALNESS of the background lighting in this shot, which was supplied by several photoflood lamps mounted on distant telegraph poles—some as far as a block away—one of the many Surtees lighting innovations.





THE SIDE of the Kodak High-Speed Camera opens in this manner for threading. A 1/5-h.p., 32 volt universal motor is used to drive the film-moving mechanism, optical plate, and take-up spool.



COMPACT IN SIZE and weighing only 32 pounds, the new Kodak High-Speed camera may be used in making motion pictures at speeds from 1000 to 3000 frames per second.

SEVENTY odd years ago Leland Stanford engaged a San Francisco photographer to make a series of pictures which would conclusively answer the question of whether or not a galloping horse always kept one foot on the ground.

Quite possibly neither Stanford himself nor Eadward Muybridge, the photographer, realized the significance of the project. In Stanford's case, certainly, it is known to have arisen from a wager, reportedly \$25,000 in California gold. But the fact remains that the Muybridge pictures represent what was perhaps the first extensive use of the camera to observe motion too fast for the eye to follow.

In making his pictures, Muybridge set up a row of 24 cameras. Their shutters were tripped by means of strings, broken by the horse as it galloped past. Despite the primitive nature of this set up, Muybridge's photographs proved beyond question that at one stage of a gallop all four hoofs are off the ground.

Muybridge's fundamental problem was one of synchronization. A similar problem exists today in making still pictures of fast moving objects. It was in part to solve this problem that the Eastman Kodak Company developed the first ultra-speed motion picture camera 16 years ago. This was the forerunner of today's Kodak High Speed Camera, widely used in industry, engineering, and research.

Such a camera, operated at speeds of 1000 to 3000 frames per second, provides a picture sequence in which a given moment of time is bracketed. Not only is a visible record obtained of action at a

# 3000 Frames Per Second!

**E-K's new high speed camera employs non-intermittent film moving system; will focus down to 11 3/4 inches; takes 100 ft. spools of 16mm. film.**

particular moment, but a record also exists of what preceded or followed that action. Projected at 16 frames per second, films shot at 3000 frames per second effectively "slow" the action pictured by 187 times. This is as if a streamliner traveling 60 miles per hour were slowed to a speed of something less than 6 inches a second.

At picture frequencies of this order, intermittent film movement is not feasible. As a result, the Kodak High Speed Camera employs a non-intermittent film moving system: the film is drawn continuously through the film gate by means of two sprockets. Since the image must remain stationary during exposure, a rotating optical plate is mounted between the lens and the film. This is geared to the film-moving mechanism and moves the image in synchronization with the moving film. End pieces at each end of this plate serve as framers and shutter.

Either of two specially designed lenses

may be used with the camera, a 63mm. f/2.7 Kodak Anastigmat or a 102mm. f/2.7 Kodak Anastigmat. The former, normally supplied with the camera for general use, may be focused on objects as close as 11-3/4 inches. At this setting field size measures 1-1/3 inches by 1 inch.

A ground-surface focusing leader is provided for insertion in the film gate, permitting accurate focusing through the eyepiece at the rear of the camera. Once the lens is focused, field size and depth of field may readily be determined. The latter is often particularly critical in work of this sort. Exposure time with the Kodak High Speed Camera equals 1/5 the reciprocal of the number of frames per second. For example, at 3000 frames per second, exposure time is 1/15,000 second. As a result, maximum lens apertures are generally used.

(Continued on Page 286)





EARLY DAY recording of music was done on the set as the picture was photographed. Here full orchestra may be seen playing accompaniment to vocalizing by Vivian Seagal, seated on park bench with co-star Alexander Gray in scene from "Viennese Nights."



TODAY, musical score or vocals are pre-recorded and the scene filmed silently, cued to playback. Here Martha Vickers and musical director Leo Forbstein pre-record a number for forthcoming "The Time, Place and The Girl."

# Music For Movies

**Composing and recording background scores is a highly specialized and rather intricate business.**

By HERB A. LIGHTMAN

**M**USIC FOR the movies was born, properly enough, on a movie set. It all began, legend tells us, when a certain putteed director found that the ex-shop-girl star of his latest epic was unable to register emotion before the cameras unless she was serenaded by the tender music of a small string orchestra playing off stage.

Be that as it may, the string ensemble soon became an integral part of movie-making, and no set was complete without one. About the same time, someone reasoned that perhaps the audience would get the point of the film story more effectively if these same musical emotions were recreated in the theatre as the film unfolded on the screen. And so, pianos were installed and the most enduring pianists were set to work interpreting movie moods in terms of music. "The Dance Of The Hours," "William Tell Overture," and "Hearts And Flowers" were melodies which seemed to fit the entire gamut of screen moods in those days.

As the idea caught on, the more affluent picture houses installed pipe organs, and it wasn't long before small orchestras were hired to accompany the action on the screen.

It was soon afterward that talking pictures became a reality, and for the first time, music literally became wedded to celluloid.

From these modest beginnings there has grown an industry within an industry, until today every motion picture studio maintains a staff of first-rate modern composers whose sole job it is to write background scores for screen drama. Producers have found that music is one of the most effective means of establishing mood, of identifying characters, of speeding up or slowing down the pace of the action, of pointing up the little subtleties that might be lost were they to depend solely upon picture and dialogue for audience reaction.

Yet, even with all of the progress that has been made in adapting music to the screen, there still exists a certain controversy regarding the role that such music should assume in relation to the action and dialogue of the photoplay. One faction maintains that music for the screen should be so subtle that the audience is never aware of its presence as such—the theory being that the emotional content of the composition will convey itself subconsciously to those view-

ing the film. The opposite school of thought argues that unless the background music asserts itself into the very action of the story, its effect is lost.

The most logical evaluation lies somewhere between the two. Music for the screen should, like any other element of production, function primarily to enhance the meaning of the story. Used intelligently, it serves as a smooth transition between sequences, provides dramatic contrast between the visual picture and the underlying idea, prepares the audience for a situation by "telegraphing" the mood, and provides an effective association of ideas for establishing characters and locales.

Although directors are loath to admit it, proper music can sometimes inject into a situation meaning that was not clearly brought out in the staging of the action. The same scene underscored by completely different musical themes can convey several opposite meanings. In any event, the music behind the scene should complement that scene and not fight with it for the attention of the audience.

It is possible to look back over the past several years and recall many excellent pictures that owe at least a part of their effectiveness to superlative musical scores.

These musical backgrounds, had they been composed as symphonies and not film scores, might have been regarded as important orchestral works worthy of performances in any concert hall. Certainly many of them reveal as much effort and talent as several classics made immortal by time alone. It yet remains for concert-goers to forget their prejudices

(Continued on Page 288)



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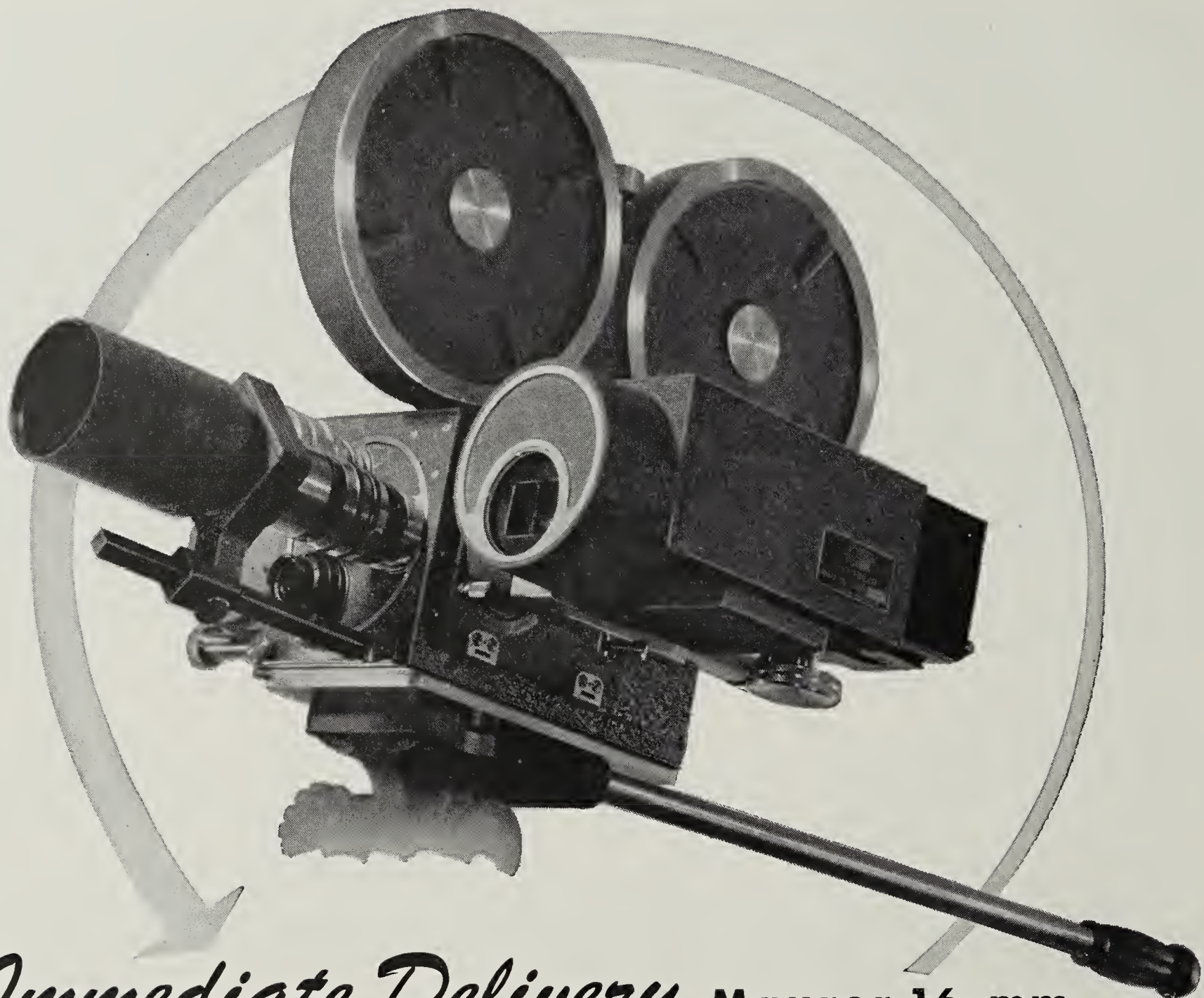
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# THE CAMERA'S POINT OF VIEW

Match the viewpoint of your camera with the mood and pace of your story for a more professional finish to your movies.

By CHARLES LORING

A SPECIFIC situation will never look quite the same to two different people. Subconsciously our impressions of a scene are colored by our own past experiences, emotional make-up and alertness. In other words, each of us surveys a situation from our own personal "point-of-view."

In the same way, every cameraman—be he studio professional or home-movie hobbyist—has a different approach to filming an individual sequence. Each will look at the situation differently and tend to film it from his own viewpoint. What's more, the choice of camera angles which he employs will determine the *audience's* point-of-view in reacting to the sequence.

All of this works to the cameraman's advantage, for it allows him to get style and approach into his camera treatment.



INTERESTING angle shots feature John Mansur's 16mm. movies which are consistent award winners in Philadelphia Cinema Club contests. Lacking a tripod at the moment, Mansur makes a low angle shot of divers in action while Mrs. Mansur aids in steadying the camera.

Remember that while the cameraman sees the *entire* situation which he is filming, *the audience will see only as much of it as he frames in his view-finder*—and they will see it in terms of the perspective which his camera angles create.

Since point-of-view is so important, then, it is to the cameraman's definite advantage (even if he is only shooting scenes of the kiddies in the backyard) to sit down and do a bit of planning before he starts the camera. He should decide just what kind of mood he wants to establish, what kind of camera angles it will require, and how the camera can be used to best complement the action. This bit of planning will pay its way many times over, for it does away with the costly hit-and-miss shooting which we see so often. It will give the screen presentation a more professional finish, and—most important of all—it will tend to draw a more appreciative reaction from the audience.

The camera, depending upon its position in relation to the setting and the action, can convey many different impressions of the same scene. It is for the cameraman to decide what impression he wishes to create and then follow through accordingly. Let's take a look at some of the basic principles of camera viewpoint, and the ways in which they influence an audience's impression of a particular scene.

*The High Angle Shot:* When you look down at anything, you automatically become (in a psychological sense) superior to whatever you are viewing. If you look down from a height at a scene even as vast as the Grand Canyon, you will still experience a sense of power that comes from having the whole thing spread out before you. Subconsciously you feel that it belongs to you and that you are able to command it from your exalted position. This probably explains why political dictators invariably build their retreats on mountain-tops, and feel most powerful when haranguing the masses from a balcony.

In terms of the camera, a high angle creates a very similar

(Continued on Page 284)



WITH KODACHROME film in his camera and a pola screen over the lens, Richard Thiriot, of Salt Lake City, makes a low angle shot of a copper skinned Navajo backdropped by clear blue sky, for his latest 16mm. documentary on contemporary life of the Navajo's.





ONLY INDICATION that this is a 16mm. production is the Mitchell Professional 16mm. camera revealed by the opened camera blimp. Otherwise the equipment is the same as used in average Hollywood studio productions.

THE GENERAL LIGHTING projected onto sets was tinted with colored filters to enhance pictorial quality of the thatched roofs and rugged stone exteriors.



## GRAND OPERA IN 16MM.

**How one producer found it more efficient  
and economical to make 16mm. color films  
using a 35mm. studio and its equipment.**

By ELWOOD NICHOLSON

**G**EARING production to standard 35-mm. methods and equipment, save for the 16mm. camera, Amalgamated Pictures, of Hollywood, have proved that a 16-mm. color production can be produced for less money and in less time than when undertaken in the average 16mm. film studio.

The proving ground was the Hal Roach Studio in Culver City and the production a three-reel version of the opera, "I Pagliacci," which we filmed in 16mm. Commercial Kodachrome in two ten-hour working days. Obviously, this was not accomplished without considerable advanced planning, with strictest economy one of the dominant aims. Moreover, we proved that a limited budget 35mm. color production can be made more economically by shooting it in 16mm. Kodachrome, then blowing it up to 35mm. Ansco Color. Releases of this production are to be made available in both 16mm. and 35mm.

Chiefly responsible for the remarkable time-saving in production was the use of the Mitchell Professional 16mm. camera. Its light weight and compactness made maneuverability within stage space of limited area no problem. Its many features enabled us to produce, while shooting, many of the cinematic effects that usually demand costly optical printing.

Otherwise, the usual sets, lighting, etc., employed in 35mm. production, were used. One week preceding the shooting, the sets were carefully selected and erected on the sound stage. Camera angles were so planned that the camera worked within a 15-foot radius throughout the production, with the exception of one or two long shots of the village in which the action was set.

Lighting was rather a simple matter. The entire set and all backings were illuminated to an overall level of from 800 to 1200 foot candles, depending upon the color contrast required for building fronts,

the roofs, and the clouds, trees, etc. We also used projected color to enhance pictorial quality of the thatched roofs and of the buildings constructed of volcanic stone. Once the entire set was illuminated to our satisfaction, it was a simple matter to work at any camera angle by using only 6 to 10 lights around the camera.

Exposures ranged from  $f/2.3$  to  $f/2.5$  depending upon the distance of the back and foregrounds. Arc lamp illumination was employed only where night effects were called for, and then incandescents were used to light the actors in the foreground. The arcs flooded the backings and buildings with light of approximately 350 foot candles in intensity, which did a beautiful job of upsetting the color balance of 3200 to 6000 K. But by using two stops under-exposure, a soft silvery sheen was imparted to the overall scene; the color rendition was more in the gray scale, and this resulted in a truer rendition of the night effect we sought.

Conceived and directed by Thomas Peluso, well known musical figure, this new treatment and presentation in color of the opera will, it is hoped, do more to place grand opera in an idiom for laymen and for those who heretofore have shunned opera as "highbrow" than any musical presentation since Mr. Peluso's "Opera Of The Air," sponsored by Union Oil Company. The condensed version of "I Pagliacci," and the others which comprise the program of 52 which are to be filmed,

(Continued on Page 288)



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MANY OF the professional cinematographer's tricks and devices are regularly used by Long Beach Club cameramen, when photographing on location. Here a "grip," recruited from among the club's membership, holds a reflector while a brother cinebug shoots a closeup.



CLUB MEMBERS, when in production on location, may be identified by attractive white sweaters bearing the club's insignia, "L. B. C. C. Productions," on the back. Here group of club's cinematographers are focussing their cameras for a shot for "Happy Landing."

# AMATEURS MAKE MOVIES THE HOLLYWOOD WAY

Long Beach Cinema Club's systematic production methods result in prize-winning pictures.

By RALPH LAWTON

ONE REASON why movies made by the Long Beach Cinema Club consistently win prizes is because they are produced like movies in Hollywood. That is, the productions are organized and run on a business-like basis right from the beginning. First the story is written, then the shooting script. The shooting is carefully planned and camera positions and story action diagrammed. Screen tests are made in selecting the cast, then a production unit is assembled which includes the director, chief cameraman, script clerk, property men, grips and gaffers and, when a picture is to be made in sound, a sound technician.

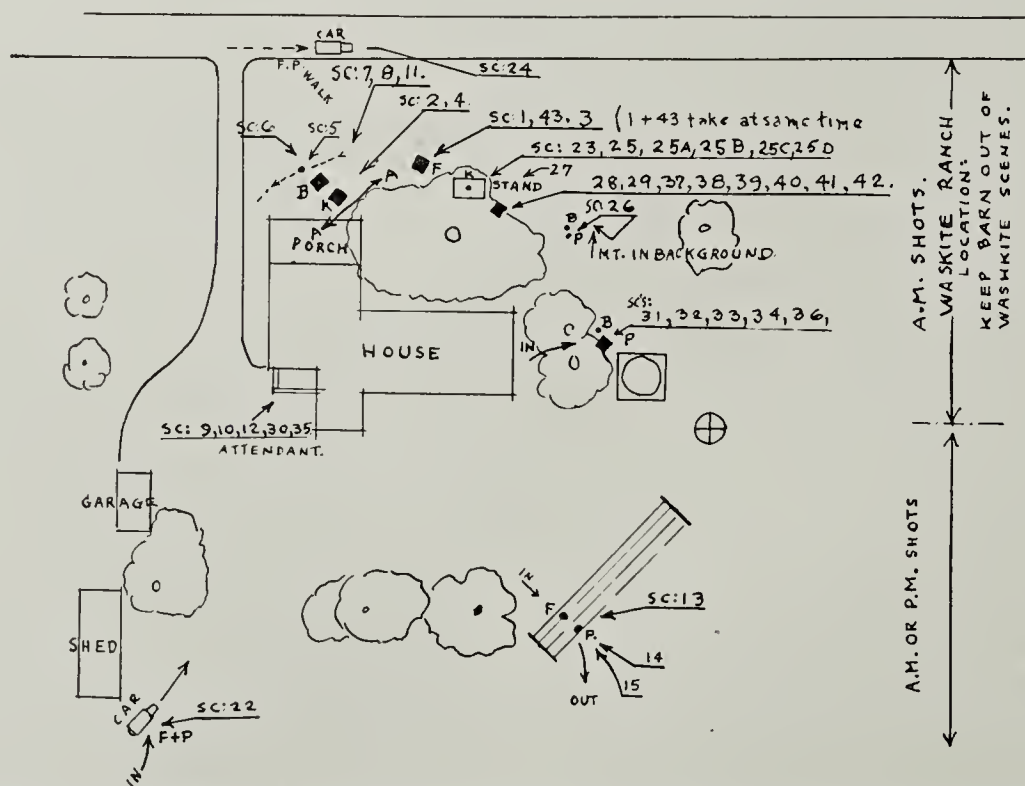
The man usually found heading film production activities of the club is Clarence Aldrich, local architect and one of the founders of the club. Years ago, Aldrich was connected with a Hollywood motion picture studio, where he learned the rudiments of movie production and had opportunity to observe how necessary was a smooth working staff to the success of a picture.

Later, when the Long Beach group embarked on making serious 8mm. and

16mm. films, as a club project, Aldrich applied sound business methods to these film productions. As a result, the club

has been producing one or more feature-length pictures each year, of which there are usually several versions in both 8mm. and 16mm, photographed by as many members. Unlike with some amateur movie clubs, participation in production of club films is not limited to a chosen few comprising the elected technical staff. Any club member may undertake to photograph his version of the picture.

Judging from the number of films produced so far, there seems never to be a dearth of continuity ideas among these Long Beach movie makers. On the contrary, so many good ideas are offered when story conferences are called, the committee is taxed in making a final decision. Among stories filmed to date, which have won national renown include "Fire From



NOT ONLY is a comprehensive shooting script prepared for every club film production, but each location is analyzed and the shooting scheduled in diagrams like this. Diagrams show location of camera for each scene as well as position of players and important props. Shooting thus becomes an orderly procedure, and trips for retakes are held to a minimum because the shooting was carefully planned in advance.



the Skies," a national defense film produced during the war, "Happy Landing," aimed to publicize the attractions of Long Beach, and "Farmer's Daughter" and "Chicken Feathers"—both rural comedies with Keystone comedy overtones.

Aldrich says that planning these pictures is more than half the fun. The production staff usually gets together several times for discussions, after the story has been selected, and plan locations and various bits of business that will make the picture more than an ordinary movie. Then location scouting trips are made and camera positions planned, so that when the company arrives on location, everybody knows what is to be done, where the cameras are to be set up and the players what to do.

Preceding the actual starting date of each production, however, Clarence Aldrich spends considerable time in the preparation of the shooting scripts and in making the location charts. Skillfully, with his architect's pen, he plots each location and indicates on diagrams the position of the camera for each scene as well as the direction of travel of actors and vehicles taking part in each scene.

These diagrams, along with the shooting script are duplicated on his blueprinting machine to provide separate copies for each of the technicians and members of the cast, much the same as is done in Hollywood studios.

Makeup is an important consideration in every production and several club members have devoted considerable study to the subject and have produced some notable results, using standard studio techniques and makeup. Sometimes, when productions are to be shot in both black and white and color, makeup becomes a problem; but this is usually solved by happy compromise. Raymond Fosholdt, a keen student of Max Factor's techniques, was the club's first exponent of motion picture makeup and is credited with many successful character transformations for amateur screen stars of Long Beach Cinema productions.

One of the advantages of working together in a group like this is that the individual amateur is able to make better pictures because of the assistance which other members are able to render; for any movie amateur knows what a task it is to try to make a serious film alone without understanding and competent help. Also, he invariably is able to use a wider range of equipment and accessories, owned by other members and usually pooled and made accessible to the club while production is in progress. Thus dolly shots, fades and dissolves and the use of sunlight reflectors are made possible, further enhancing his picture.

So well does the club's movie-making group work together that seldom is pro-



## "And the Villain Still Pursued Her"



OUR heroine is in a tough spot again. Ever since the first "flickers" were filmed, this little gal has been getting in front of locomotives, falling from skyscrapers, teetering on the brink of eternity. And ever since 1927 her perilous flights have been filmed for the Saturday serials with the aid of Mole-Richardson lighting equipment. During those 21 years, the Academy of Motion Picture Arts and Sciences have awarded five "Oscars" to Mole-Richardson Company for outstanding achievements in the field of photographic lighting.



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## For Movie Amateurs

**FOR QUICK** focusing of movie films, after setting up projector, splice in two or three frames from a discarded title in middle of the film leader. Bring these before projector aperture momentarily to adjust focus. Prevents blistering your good film and your show will start off right with picture in focus.

**A WHIRLING** title can be made by mounting title card upside down on your phonograph turntable. Photograph it with camera upside down. Run camera long enough to read title completely, then start phonograph motor and let run for five seconds before stopping camera. When film is developed, turn end for end. Result: title will appear first spinning, then come to a stop, right side up.

**FADES** can be made with any 8mm. or 16mm. camera by closing down lens diaphragm. Trick is accomplished easily by making a control gadget that fits over lens diaphragm ring, as follows: Cut a narrow ring from a piece of pipe, slightly larger than diameter of lens. Drill and tap hole in edge to take small set screw. On opposite side, solder or braze a 3" length of welding rod for a handle. Slip over lens and secure by set screw.

**SPRING CLOTHESPINs**, numbered and arranged on a taut wire above one's editing table, afford simple means of holding film strips ready for editing and splicing.

**IF YOUR** 16mm. camera provides for making single frame exposures, you can make 16mm. slides, same as Leica and other 35mm. still camera owners. Mount frames in regular 2 x 2 slides, using appropriate masks made of thin cardboard. Screen slides with regular 2 x 2 projector.

**TO LABEL** your films, write or letter the title at beginning of white leader, then apply coat of clear nail polish over the lettering.

**A WAIST-LEVEL** finder for your cine camera can be made from a reflex finder salvaged from an old box camera. Mount it on a strip of sheet metal, and bend strip to form a clamp so it may be attached to top of your camera.

**LETTERING** titles by hand becomes easy when you use the inexpensive celluloid lettering templates on sale at stationery stores. Some dime stores have them, too.

duction delayed or postponed because one member chooses to play golf instead of responding to production calls on set or location. Recently, the club provided its members with white sweaters bearing the initials "L. B. C. C." on the back, to be worn when on location as a badge of membership in the organization. The appearance of the group shooting on location thus attired also gives them a certain measure of prestige and entree to shoot in otherwise restricted locales.

More recent interest has centered on Clarence Aldrich's sound on film productions, which are also a Long Beach Cinema Club project in that while his is the only sound camera employed on the productions, the cast and technicians are recruited from among the club's membership. Aldrich possesses an impressive array of sound equipment. Years ago he acquired one of the first R.C.A. single system sound cameras. This was known as the "Newsreel Model" and featured a small microphone built into rear of the camera. Inside was a galvanometer for recording sound on the film as the picture was photographed.

Over a period of time, Aldrich has improved the camera with a separate microphone, an improved recording head and a blimp which he designed and built himself. He has probably tested every known make and model microphone with

his equipment until today he has recording equipment that gives him near-professional results.

People gather around to watch whenever the club is on location, just as they do when a Hollywood studio is shooting pictures. The fact that it's an amateur production seems to make no difference, and frequently youngsters with autograph books in hand will gather around the 'stars' asking for their signatures.

It goes without saying that Long Beach Cinema Club members have lots of fun making pictures this way, as well as turn out pictures with greater professional finish. Already, two of the founder members have advanced to professional picture making, due to the interest and experience gained by working with the group.

As for Aldrich, he has no professional aspirations. One time he screened one of his musical short subjects for a friend in Hollywood, who ecstatically called in a movie mogul to view the film. At conclusion of the showing the magnate arose and offered Aldrich a chance to produce commercial films in Hollywood.

Aldrich declined, saying, "This is my hobby. If I were making movies for a living, I'd be in it to make money, and that would spoil the fun." And besides, the Long Beach Cinema Club would lose one of its most enthusiastic amateur film producers. ★ ★ ★

## "SPECTRA" MEASURES COLOR TEMPERATURE

(Continued from Page 267)

of light, *particularly the red and blue*, are directly dependent upon the color temperature. If the color temperature is low the relative amount of blue rays will be low, and hence the reds and yellows will predominate due to the lack of the blues; if the color temperature is high, the relative amount of blue rays will be high and the light will take on a "whiter" appearance because of relatively lesser amounts of reds and yellows by comparison with the blue rays present in the light source.

White light is a combination of rays of all colors. If the color temperature is raised still higher, the relative amount of blue has increased so much in comparison with the amount of red and yellow rays present, that the light simply looks blue—and "degrees Kelvin" is the measuring stick of how many blue rays are in the light source by comparison with the red rays. The eye, being adaptable, is able to adjust itself to individual situations, and after a short time in any of the above color temperatures, objects will begin to appear normal. But film cannot do this, hence some mechanical means must be used to give the *control* we need for photography.

This control takes two forms: the first to be able to determine where we stand

with the composition of the rays in the light source; and the second to be able to do something about it. Standards had to be set and constants decided upon, and of course the first thing that must be regarded as a constant is the film itself, in the case of the three-layer single base films of which Kodachrome is an example. It was found that the optimum mean average color temperature of daylight is approximately 5900 degrees Kelvin, so the film was balanced for this value. Type A, for use with high-efficiency photoflood lamps exclusively was balanced for 3400 degrees; and the Commercial Kodachrome and the Type B were balanced for 3200 degrees, designed for use with standard studio lighting units. These values must be met as a pre-requisite to good color reproduction. If a disparity exists between the color temperature of the light sources and the values established for the film, something must be done: either the light source must be adjusted to meet this value, or a correcting filter used to compensate for the disparity. In either case some simple, reliable and accurate method must be used to measure the color temperature of the light from the light source.

An approach to the problem had been made with meters which employed pro-



cesses requiring the matching of color tones. This was not entirely satisfactory, since more often than not two people reading the same illumination (with a constant color temperature) would get two different results, and even the same individual reading the same illumination at two different times would get two different results. This, too, is the result of the adaptability of the human eye and its capability of adjustments which a mechanical device cannot make. The principal shortcomings of color temperature meters up to the present time, then, was that they depended upon the human eye to determine a match or a mismatch of color tones.

In the new Spectra direct-reading color temperature meter a simple, direct and positive approach is made to the problem. Simplicity and direct approach are essential to speed and accuracy under practical studio working conditions, and rule out any methods dependent upon the human element, such as matching sectors to delicate nuances in color tones, especially when fatigue, or even variations in individual responses, can influence the result.

The Spectra is basically a photo-electric cell whose output is fed to a microammeter, as in the case of photo-electric exposure meters. A red filter rests between the diaphragm (which controls the amount

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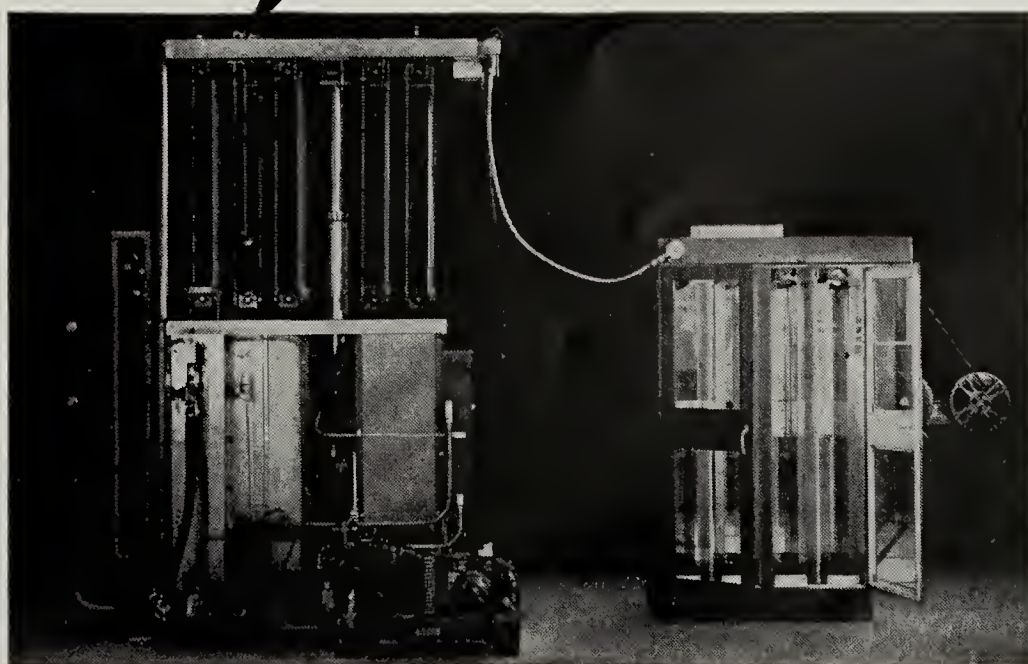
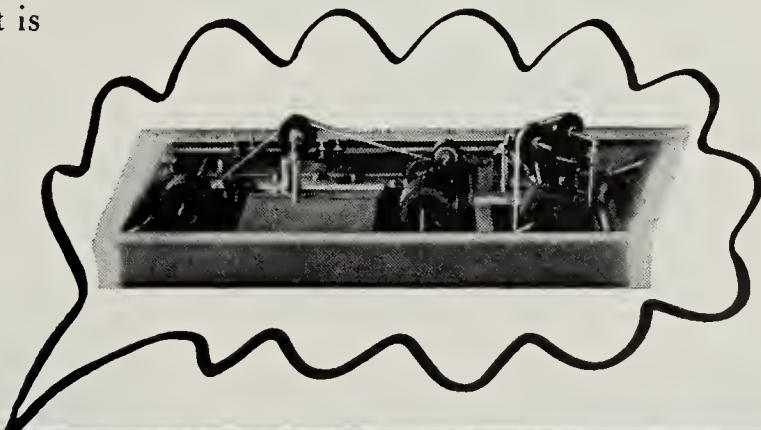
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of light entering the cell) and the cell itself. The scale of the microammeter is calibrated in degrees Kelvin. The meter is pointed at the light source and the diaphragm adjusted until the needle on the scale points to a reference marker, indicating a fixed amount of red rays striking the photo cell by virtue of the control by the diaphragm and the red filter. Then, with the meter resting in the hand, the trigger is squeezed with the forefinger, removing the red filter from in front of the photo-cell and replacing it with a blue filter. *The value to which the needle then points is a direct reading of the color temperature of the light being examined.* By reading the value with the blue filter in place over the photo-cell we have established a *ratio* between the amounts of blue rays going through the blue filter into the photo-cell to the red rays we were using as a basis for the measurement, and since we now know the relative amount of blue to red rays, we have satisfied the requirements for the measurement of the color temperature of the source. The meter is photo-electric in operation and eliminates all human element in its reading. *In actual operation, it is merely a matter of pointing the meter to the light source, adjusting the diaphragm to the reference marker, squeezing the trigger, and taking the reading directly from the scale.*

Now that we know where we stand, the next thing is to do something about it. Depending upon the color process used, we will be aiming for a color temperature of either 5900 degrees or 3400 degrees Kelvin, and either the light itself must conform to this value or correcting filters used to compensate for the disparity between the light color temperature and the value for which the film has been set. If we are working out of doors, the only control will be the compensating filters; indoors, and with incandescents, we have the compensating filters and the additional control of the voltages at which the lamps are operating, plus the use of filters over the lamps themselves.

The color temperature of the light outside can vary from a low of 2500 degrees either in the early morning or late evening when the sun is low, to a high of

around 20,000 degrees, which will be found when using a north skylight during a clear day and with no sun illuminating the subject, as would be the case if we were shooting in the shade of a tree of a building. As we pointed out earlier, the synthesis of light is readily apparent in its wide variations, but in dealing with color film we must pin ourselves down to a fine point—5900 degrees. If our light temperature is above this value the results will be too cold; if below it, results will be too warm; and a difference of 50 degrees, which go completely unnoticed in the original scene due to the adaptation of the human eye, will produce a noticeable deviation from the normal on the film—and in nine cases out of ten, meters using the human eye as a criterion for a match or mismatch will also miss the difference. While corrective control in the laboratory is possible in some color processes, this separation does not obtain with the three-layer single base films unless the color negatives are made from them. So we are left with the compensating filters as the only remaining means of control.

For use in conjunction with the Spectra the Photo Research Corporation furnishes a chart wherein the correction produced by every filter in both the Harrison and the Eastman Color Compensating series is given either upwards or downwards, as the case may be. For example, suppose we are using an emulsion balanced, for exterior work, for 5900 degrees. Upon reading the meter we find that the color temperature of the light at the time and under those particular conditions happens to be 7500 degrees, a common reading on an overcast day. We would then refer to the chart and pick out the filter indicating the correction downward from 7500° to 5900°, and this would be the filter that would be used over the lens of the camera.

In interior work deviation from the rated color temperatures of the lamps is caused by discoloring of the globes and by variations in the line voltage. Variations in color temperature beyond permissible tolerances can readily be brought on by relatively small changes in line voltage. If a uniform discrepancy in color tem-

perature exists the proper filter can be selected as outlined above. If an anomalous condition exists we will be aware of it *before* any film will have been exposed under electrical conditions impractical for photography.

We can also use voltage *control* as a means of color temperature control when incandescent lamps are used. The higher the voltage the hotter the filament will become, and the more blue rays will be radiated, hence the higher the color temperature. If a rheostatic or variac means of voltage control can be used, the disparity between the required color temperature and the actual color temperature can be removed by changing the voltage until the lamps read the required temperature. Application of this method in practical conditions will prove possible only in occasional situations, however.

Because of its spectral discontinuity, fluorescent lighting for color is not satisfactory.

The meter itself is used in the same manner as an incident light meter. Indoors, it is pointed directly toward the light being examined, and the diaphragm rotated until the needle comes to the reference marker, the trigger squeezed, and the reading taken. In use outdoors, a sphere is placed over the flat disc used for interior readings.

The reason for the use of the hemisphere is to take into account *all* the factors that affect the *effective* color temperature in an exterior scene. The factors that affect this value are the amount of sky illuminating the subject, the brilliance and the altitude of the sun, the amount of haze and clouds present in the sky, and the amount and character of reflected light present in the overall light picture. It works like a chess game, where any number of combinations of factors are possible with as many different results.

The reason the sky is blue is because of minute particles that are present in the air. If these particles did not exist the sky would look black, as it does to an observer in the stratosphere, where the air is so thin that very few particles are present. These particles also form nuclei around which condensation occurs and clouds form. The blue light we get from the sky (in places other than Southern California where the smog often won't let us see it) is caused by these particles scattering the blue rays coming from the sun.

There is a direct relationship between the size of the particle and the wave length of the light it will scatter. Haze in the air is caused by a formation of moisture around the dust nucleus, and as the size of this particle varies, the wave length of the light it will scatter will vary. As a matter of fact, if we were to illuminate a subject with pure sunlight

## EVERYTHING PHOTOGRAPHIC

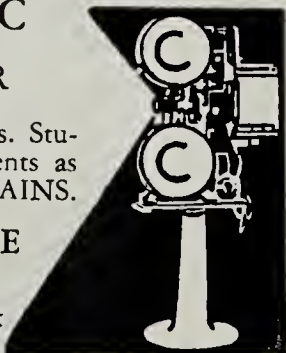
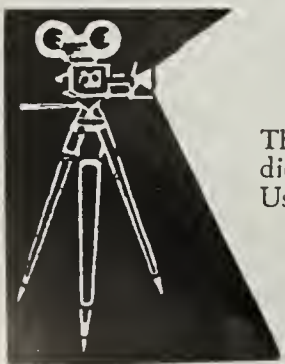
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around noon with no sky illumination, we would find the result photographed in decidedly warm tones. This is because of the scattering of the blue rays by these dust particles, the wave lengths of which are now missing in the pure sunlight.

A light measurement here would indicate a value in the neighborhood of 5400° Kelvin. It follows, then, that a wide variety of color temperature is possible as a result of different sky conditions and the different amounts of sky used as a part of the light source, all this in addition to the variations caused by the changing altitude of the sun. Actually, the reason the sun drops in color temperature with a lower altitude is because of the increased scattering of the blue rays brought on by the increased angle at which the sun strikes the particles, leaving less and less blues in the sun's direct rays until the sun becomes red when it is on the horizon.

Which brings us to reflections, plain and fancy!

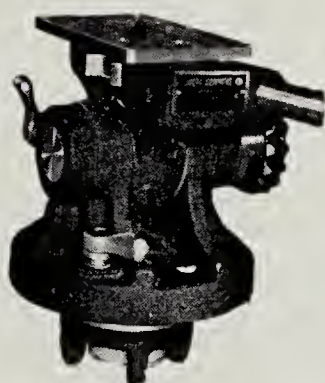
In a *specular* reflection, where the rays leave the reflecting medium much in the same form as they entered (such as reflections from water), we would find the basic color temperature unchanged. But it is where we have a *diffuse* reflection that things start happening. And most of the reflections are diffuse. If a large area of a given color is illuminated by the sun and an object is photographed nearby, the average color temperature of light illuminating this object will be found to be greatly affected. For example, if a person is photographed near a bright red building upon which the sun is shining brightly, the picture will be too warm in tone because of the lowered color temperature as a result of the reflection from the red building, unless something is done about it. The sphere on the Spectra does—it integrates the sunlight, the quality and the amount of skylight, and the reflections that affect the color temperature of the illumination and averages them out to give us an overall value that will be correct for the film. The Spectra meter is held at the subject position, pointed toward the camera, the reading taken, and the proper compensating filter chosen from the chart.

The point may be raised that the attenuation characteristics of the compensating filters vary with the different wave lengths of light. This is true, and for that reason each of the compensating filters was rated for 5900°, 3400°, and 3200°. As long as one of the values in the change-from-change-to-relationship is one of these constants, the amount of correction is one of the fixed values listed; and in direct color photography this is always the case. It is when both values are variable that an infinite number of corrections would be possible for any one filter. ★ ★ ★

# “PROFESSIONAL JUNIOR” CAMERA EQUIPMENT

## GEAR DRIVE TYPE

Gear Drive head, made of Dow Metal, weighs but 5½ lbs. and is interchangeable with the Friction type head. It handles all types of cameras. Snap-on metal cranks control pan and tilt action from both sides. Worm-driven gears are Gov't spec. bronze.

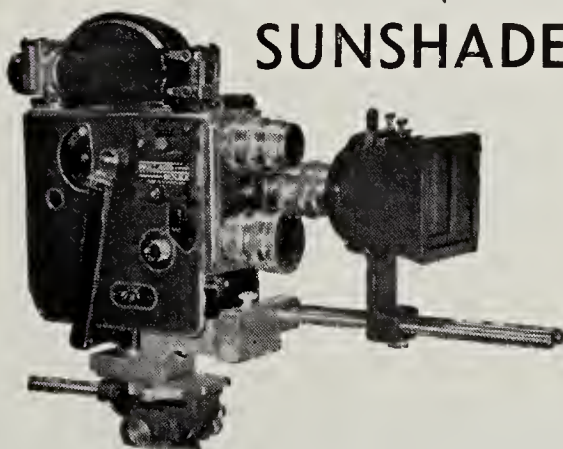


## FRICTION TYPE TRIPOD

Top plate handles 16mm. EK Cine Special with or without motor; 35mm. DeVry; B & H Eyemo with motor and 400' magazine; Speed Graphic or 8 x 10 View; and all 16mm. hand-held cameras. The removable head is interchangeable with the Gear Drive head. Both types fit “Professional Junior” standard tripod base, “Hi-Hat” and “Baby” all-metal tripod base.

## BLIMP for 16mm .E.K. CINE SPECIAL

This Blimp, constructed of Dow Metal, is thoroughly insulated to afford absolutely silent operation. Has many exclusive features that allow focusing and lens calibration changes from the outside while taking pictures. Blimp takes synchronous motor drive which couples to camera. A dovetail bracket is provided to mount an erect image viewfinder.



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# BOOKS

You'll Want To Read

AN INTRODUCTION TO COLOR, by Ralph M. Evans. John Wiley & Sons, \$6.00.

Those who would work successfully with color in photography must understand the combined effects of the properties of colored light, the properties of vision, and the action of the mind in interpreting color. In non-mathematical text, the author divides his discussion into three sections: physics, psychophysics, and psychology. In the first he takes up the sources of light and the objects and substances that modify it. The second section deals with purely physical light, and in the third the author considers relationship between color and its perception by the human mind.

There are 304 illustrations of which 15 are full color plates. These alone are highly instructive, both for the professional and the amateur photographer. The author, a recognized authority in the field of color, is in charge of color quality control for all color processes at the Eastman Kodak Company, Rochester.

★

PROFESSIONAL PORTRAIT LIGHTINGS. By Charles Abel, A.R.P.S., Græenberg, Publisher, \$7.50.

Here is a book certain to find a place on the library shelf of the studio still photographer. Although it is entitled *Professional Portrait Lightings*, and emphasis throughout is placed on lighting basic to all photography, the book is far more than that. It is also a textbook on what professionals like to call "The Psychology of Handling the Sitter." Any lighting described in this book can be duplicated with any type or kind of equipment. The professional who wishes to perfect his craftsmanship will learn much between the covers of this book. It is amply illustrated with hundreds of photographs augmented by diagrams of the lighting setups used in making each picture.

★

WESTWARD HOW, by Fred Bond. Camera Craft Publishing Co.; \$6.95.

Fred Bond, nationally known travel photographer knows the scenic West as few men do. He has driven more than 200,000 miles in the past ten years, crisscrossing the West from Canada to Mexico, and from the Rockies to the Pacific. In this book he gives the photographer the benefit of his vast camera experience, so that any traveling cameraist, using this book as a guide, may set out on a camera tour of the West and bring back good pictures of the most scenic spots. The book plots 21 planned camera tours and includes a supplemental route selector map.

## 'ACT OF VIOLENCE'

(Continued from Page 268)

downtown, near Commercial Street, Santa Fe freight yards, the Hill Street tunnel, Bunker Hill, and the Glendale railroad depot, and always with the city looming in the background. Other locations were shot at Big Bear Lake, and Santa Monica was utilized as the small California city. Actual homes, restaurants, bars and banks were used as the sets. Realism was the most important requirement in the staging of the film.

Naturally, such a story has more effect scenes, night exteriors and interiors than the average picture. Mood must be captured and maintained at all times. Yet utmost care was taken that each scene, shot by shot, kept a continuity of atmosphere that led into the following sequence. Also we were careful not to go too dramatic in any scene preceding a scene which called for great dramatic punch. In other words, we would not get hammy with the camera in scenes not requiring special treatment. This left us something for "punch" when it was needed later. Time of day was established by careful lighting, and for this extensive tests were made before the picture was in production.

Instead of just making a shot either day or night, we tried lighting the sets in a manner that would identify afternoon, morning, dusk or dawn. This is not too easy, and the technique used was either to project lights, using our standard lighting equipment, or by using reflected light, (see article on reflected lighting in October, 1947 issue.—Ed.) reflecting illumination on large silk surfaces and then into the sets. Many scenes were photographed by using a combination of the two types of lighting. Much work was saved by using reflected lighting through doorways, windows and any available opening. Where sets had low ceilings covering them completely, reflected lighting was a "must." There is no overhead lighting at any place in the picture.

Every scene in the film was made with a 28mm. lens in order to carry focus and to give more interesting compositions. Mr. Hans Peters, the art director, designed all sets especially for the 28mm. lens perspective and thus kept them all in fine proportion on the screen. At no time was any diffusion used before the lens on either long shots or closeups. We were fortunate in that the leading woman's role was played by Janet Leigh, a young and beautiful girl who photographs well without diffusion and who can take any kind of a key light.

The primary thought in lighting the sets was to light for the mood of the action, no matter whether it flattered or detracted from the actor's appearance.

Yet at the same time—differing from the technique followed in photographing many present day "realist" pictures—never did we distort our players' appearances to achieve an effect. They simply looked natural and like everyday people and not like familiar Hollywood actors. No make-up of any kind was used on any member of the cast. We tried to maintain on the screen a high standard of skin texture—no mask-like faces in a production of this type.

If a light source from a table lamp was actually photographed in the picture then the entire set was lighted from that direction. Since all the picture was played this way we had to have the lamps placed in the best location for the scenes before we started to shoot. Through the cooperation of Mr. Zinnemann, and by rehearsing the scene before we started to light it, it was possible to achieve natural lighting with utmost fidelity. If an actor stood between a lamp and the camera, we let him go black—just as it would appear in real life.

A higher than usual degree of contrast was employed in the lighting—broad or twin lights were seldom used. Sharp focus was maintained simply by lighting the individual shots sufficiently to be able to work at a lens stop which would carry whatever focus the shot required. At times this meant over-lighting an interior enough to stop the lens at F6.3 in order for the focus to carry. Then again quite a few scenes were made at F2. In such shots there were no depth of focus problems.

On exteriors, dawn effects were obtained by over correction with filters. Dusk scenes were filmed at dusk—with a few booster lights added for emphasis.

The tough problems arose when we started shooting night exteriors in the downtown streets of Los Angeles. It was extremely difficult to get background detail on the film when using only foreground action lighting. Street lamps aided immensely in this problem. We sometimes fastened photofloods to lamp posts a block away from where we were shooting, and aided thus, some very realistic night exteriors were obtained.

Shooting night sequences in a railroad yard proved a tough assignment because of the mechanical difficulties of running cable feeders to lamps across rails and tracks. At this location we had to get shots of an attempted suicide of a man jumping before an oncoming train, with the locomotive headlight supposed to be the only light source. Try this sometime. It was a challenging problem but it finally worked out successfully. Later, an entire scene was made showing the lights from



pullman coach windows flashing across the actors' faces. Such effects proved highly dramatic on the screen, and they could not easily have been secured without working with people who understand our difficulties and problems.

Mr. Zinnemann's background was especially conducive toward bringing about the close and effective working relationship we maintained. Years ago he and I had been fellow assistant cameramen at the EFA Studio in Berlin. Here, also, Zinnemann had been a close friend of Robert Flaherty, one of the pioneers in the field of the documentary films. They spent many hours over a period of months discussing the then "new" technique, later evidenced in Flaherty's "Nanook of the North," "Moana," and "Man of Aran."

It was Mr. Zinnemann himself who, in 1934, directed one of the first successful documentaries, the Mexican-made "The Wave," with Paul Strand, Director of Photography. He subsequently took almost identical "basic training" directing some of the "Crime Does Not Pay" series at M-G-M. By odd coincidence, his first feature film, "Kid Glove Killer," was a small-budgeted but documentary-type crime picture in which Van Heflin, one of the stars of "Act of Violence," received his first big break.

Mr. Zinnemann's knowledge of camera, and our fortunate ability to look at a scene together and see the same thing, expedited our work on "Act of Violence."

The picture was completed on schedule despite all the unlooked for problems, and this was possible only because all worked as a team—from the preliminary preparation to the final shot. It seems to me that a great deal of money could be saved by our studios if the Director of Photography were consulted in all budget meetings held before a picture goes before the camera. I fully believe that a big step towards real economy in the film industry would be made if the man responsible for the set operation of the crew, the Director of Photography, were assigned to a picture prior to the final draft of the shooting script. Thus he could suggest many shortcuts and money-saving devices which are never thought of until too late to put into execution. During the present economy wave in Hollywood many a picture is handicapped with an impossibly short schedule.

When filming falls behind schedule, the Director of Photography is blamed for being slow, because it is impossible for him to keep on schedule and at the same time turn out an even fair quality picture. The time comes when every cameraman asks: "When shall the Director of Photography be recognized as the most important cog in the *production* of a picture?" For it is he who, by virtue of ability,

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## 25 YEARS AGO

### With A.S.C. and Members

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• GEORGES BENOIT bought a Mitchell camera, then took a leave of absence upon completion of filming "Trilby" for Richard Walton Tully in order to try it out on a personal filming venture.

• ROBERT DORAN, at the Hal Roach Studios, was shooting "What Should a Girl Do" starring Edna Murphy.

• ARTHUR EDESON and Phil Whitman were collaborating on the camerawork for Douglas Fairbanks, Sr.'s, "Thief of Bagdad."

• FRED JACKMAN returned from a location-scouting tour in the mountains of Colorado, in preparation for the production of a picture he was to direct for Hal Roach release.

• GILBERT WARRENTON was on location in Montreal, Canada, shooting for Cosmopolitan productions.

• ROBERT NEWHARD finished shooting "The Hunchback of Notre Dame," which was heralded as Universal's "greatest production to date." Newhard was receiving plaudits for his artistry as a result of screening of the rushes.

• JAMES VAN TREES completed photography on the First National production, "The Huntress," shooting the final scenes on location in the High Sierras.

• GEORGE SCHNEIDERMAN was assigned to film "Cameo Kirby" for Fox, which starred John Gilbert.

• RAY RENNAHAN, who was with Technicolor, was conducting an exhaustive search of various motion picture studios in an effort to locate a valuable tripod head that had disappeared from Metro Studios while he was shooting there.

• JOHN STUMAR was photographing "Wanted, A Home" at Universal, starring Baby Peggy and Sheldon Lewis and directed by King Baggot.

• PHIL ROSEN directed and Robert Kurrle and H. Lyman Broening photographed "The Dramatic Life of Abraham Lincoln," for the Rockett-Lincoln Film Co. Kurrle and Broening shot over 200,000 feet of film for the production.

• SOL POLITO, aided by Jackson Rose, was shooting important scenes at First National for Edwin Carew's production of "The Bad Man," starring Holbrook Blinn.

• JOHN DORED, with headquarters in Riga, Latvia, was shooting documentary and newsreel footage for various American film companies on special assignment.

artistry and imagination, imbues the production with the pictorial elements that make the picture click on the screen. It is only logical, then, to include him in the preliminary planning. One does not have to be bright to realize that the studios'

business is to make and sell a product—*motion pictures*. The Director of Photography is the one who makes the *picture*. Give him more respect and responsibility and the most progressive movement in our great industry will result. ★ ★ ★

## THE CAMERA'S POINT OF VIEW

(Continued from Page 273)

impression. It places the audience in an exalted position in reference to the players in the scene. Depending upon how the trend of the action develops, it can cause the audience to look at the players either with contempt or compassion—but in any case, the characters in that scene will appear humble to the audience.

Putting it into concrete terms, let's suppose that there is a sequence in which a man is being pursued by bloodhounds. If the action were filmed from the conventional eye-level angle we might not feel especially sorry for the man, because it is plain to see that he is bigger than the dogs. In our minds we assume that because he is the dominant figure in the scene, he will probably win out against the odds.

On the other hand, let's view the same scene from a high angle. Now the difference in size between the man and the dogs is less obvious. He becomes a hunted thing, nakedly exposed to the camera's commanding eye—and the audience is made to feel superior to him, in a compassionate sort of way.

The high angle, then, is used to best advantage when one wishes to make the audience feel superior to (or feel sorry for) the players in the screen situation. Aside from its psychological aspect, the high-angle shot gives a more comprehensive view of the situation, and creates a lofty perspective that is especially valuable in introducing a new locale.

*The Low-Angle Shot:* Departing from the conventional eye-level shot in the opposite direction, we find the low-angle to be one of the most dramatic points-of-view available to the cameraman. The basic effect of the low-angle is completely different from that of the high-angle, since it tends to *exaggerate* the importance of the subject which it portrays.

The low-angle forces the perspective of the scene, so that a character thus shown seems to be taller than he really is, and can be made to actually loom into the composition. For this reason he more or less dominates the audience psychologically and places it on the defensive. Thus, the low-angle shot is especially effective in sequences where a menace is to be portrayed, or where the influence of the character is to be built up for a particular reason of plot. Films with a sinister or mystery theme benefit especially from angles of this type.

In a sense, it can be said that a low-angle is an *intimate* sort of angle, because it often serves to bring the audience more completely into the atmosphere of the scene. Let us suppose, for example, that a character is shown fleeing from the police by crawling through some undergrowth. An eye-level angle of the scene would show the details of the scene quite clearly, but would inspire very little emotional reaction from the audience. On the other hand, if the same action were shot from a low angle, the fugitive would come crawling right up into the lens where the audience could see the terror in his eyes. It would be almost as if the spectators were in the actual locale with him, experiencing the same emotions.

Another function of the low-angle shot—and one which is quite effective—is that of pointing up the compositional importance of a commonplace static subject. A radio tower, for example, is just a radio tower when viewed from a straightforward angle—but shot from a low angle, it becomes an imposing monument of steel towering into the sky.

Oftentimes, by adopting a low angle, the cameraman can eliminate distracting backgrounds and show his subject to best advantage against the sky. Or, as a variation of this technique, he can create effective composition or symbolism by shooting the subject from a low vantage point against a dramatic background. In any event, the low-angle is a very striking point-of-view if used correctly—and not too often.

*Framing Your Scenes:* When a subject in a scene is framed by another object, a direct relationship is established between that subject and its locale. A house framed by trees, for example, is no longer just a house—but part of the landscape.

One of the most effective compositional devices which the cameraman has is the shot in which background subjects are framed by an object in the foreground. This type of shot gives added depth and perspective to the scene and tends to draw the audience into the action.

Photographically, such scenes are a bit more tricky to shoot, since they require a great depth-of-field if both planes of composition are to be rendered in acceptable focus. This means that a wide-angle lens should be used, with sufficient illumination to allow the lens to be stopped down as far as possible.



The framing of a scenic shot with a person in the foreground provides a fine measuring stick for size and distance. If the focus must favor one of the two subjects, it should usually be the one in the background, or the one that is the most important in the scene.

Point-of-view in movies depends greatly upon the *perspective* of the lens used—which, in turn, depends directly upon the focal-length of the lens.

The standard lens (1 inch for 16mm. cameras) produces a so-called *normal* perspective. That is, it covers practically the same angle of view as the human eye. It shows the subject clearly and without any exaggeration of line or proportion.

The wide-angle lens, on the other hand, forces the perspective of the scene, makes settings look larger than they actually are, exaggerates apparent distances, and allows for dramatic composition because of its inherently great depth-of-field.

The telephoto (or long focal-length) lens tends to flatten out the separate planes of the scene, while magnifying the subject. Because of its short depth-of-field, it is a fine lens for close-ups, since it throws distracting backgrounds out of focus.

These characteristics should be kept in mind when the selection of a lens is being made for a particular scene. The choice of lenses will have much to do with the point-of-view from which the scene is shown.

Let us suppose that you are filming a sequence in a long corridor and you wish to point up the setting itself. If you use your standard lens at eye-level, the scene will be photographed with normal perspective, and the corridor will be nothing more than an unobtrusive background for whatever action develops. But if you photograph the same scene from a low vantage point, using a wide-angle lens, the whole point-of-view of the scene will be changed. The perspective of the corridor will be forced so that it will appear to be twice as long as it really is. The lines of perspective will taper off to a distant point. The tilt created by the low angle will cause straight lines to lean just enough to give the setting a dramatic appearance. Figures in the scene will seem to loom forcefully into the composition. What was once an ordinary scene is now a dramatic, suspenseful situation. This sort of set-up, of course, should only be used when the mood of the story demands such an atmosphere—never just for the sake of novelty.

In most movie scenes, the camera becomes a spectator, detached from the action, recording what is happening from whatever vantage point offers the best view. But occasionally the camera adopts the viewpoint of one of the characters and we see a bit of the action as it looks

to *him*. In such a case we say that the camera is subjective.

The subjective approach is just about the ultimate in "point-of-view," since it practically puts the audience in the other fellow's shoes. Through the personal eye of the subjective camera, we can see how the world looks to a man running through a forest, falling through space, or sitting on the floor. One or two very striking photoplays have been made using the subjective approach throughout. Many others have used it successfully in special scenes or sequences. Correctly motivated, it is one of the most dramatic devices the cameraman can employ.

In order to be most effective, the subjective shot must be clearly pointed up by the scenes that precede it. The audience must always know through the eyes of *which* spectator it is viewing the scene. This can be most definitely established by building up to a close-up of the character looking into the lens or just off-screen, and then cutting immediately to a shot of what he sees and how he sees it.

The most obvious use of the subjective treatment is to duplicate an unusual mental state such as intoxication or dizziness, but it can also be used for dramatic or comic effect. For example, suppose you have a sequence in which a tall man is shown talking to a child. The relative sizes of the two persons are first established by a straight-forward shot. Next, the camera adopts the viewpoint of first one, and then the other. The man is photographed from a low angle, as he would appear to the child looking up at him. Similarly, the child is photographed from a high angle to simulate the man's point-of-view. Immediately the extreme difference in size is pointed up.

The important consideration in the use of subjective shots is to make sure they fit into the story, are clearly motivated, by the shots that precede them, and are not used too often. A subjective shot abruptly thrown into the sequence with no preparation or logical reason, calls attention to itself as a device and therefore detracts from the action.

Camera "point-of-view," in the final analysis, depends primarily upon the cameraman's choice of angle in a specific scene or sequence. In any event, he must match the viewpoint of his camera to the mood and pace of the story, select angles that clearly show the action, and show what there is to be shown in a fresh and original way. The possibilities are almost unlimited and the wise cameraman, be he professional or amateur, is the one who takes the time and thought to give his camera "point-of-view." ★ ★ ★



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# Current Assignments of A. S. C. Members

Members of The American Society of Cinematographers were engaged as Directors of Photography in the Hollywood Studios during the month of June, as follows:

## Columbia

- HENRY FREULICH, "Song of India," (Gibraltar) with Sabu, Gail Russell and Turhan Bey. Director, Albert Rogell.
- CHARLES LAWTON, "The Lovers," with Cornel Wilde and Patricia Knight. Director, Douglas Sirk.
- VINCENT FARRAR, "Triple Threat," with Gloria Henry and cast of All-American football stars. Director, Jean Yarbrough.
- REX WIMPY, "Smoky Mountain Melody," with Roy Acuff and Smoky Mountain Boys. Director, Ray Nazarro.

## Eagle-Lion

- WILLIAM H. GREEN, "The Big Cat," (Technicolor) with Lon McCallister and Peggy Ann Garner. Director, Phil Karlson.
- JOHN ALTON and GUY ROE, "Red Stallion of the Rockies," (Cinecolor) with Jeanne Heather and Arthur Franz. Director, Ralph Murphy.

## Independent

- GREGG TOLAND, "Enchanted," (Goldwyn-RKO) with David Niven, Teresa Wright and Evelyn Keyes. Director, Irving Reis.
- GEORGE BARNES, "The Numbers Racket," (Roberts Productions; Enterprise Presentation) with John Garfield and Beatrice Pearson. Director, Abraham Polonsky.
- ERNIE LAZLO, "Some Rain Must Fall," retitled "Cover-Up," (Strand Prod.-U. A.) with William Bendix, Dennis O'Keefe and Barbara Britton. Director, Alfred E. Green.
- JACKSON ROSE, "Bungalow," (Belsam Prod.-20th Rel.) with Tom Conway and Margaret Hamilton. Director, Edward L. Cahn.
- WINTON HOCH, "Tulsa," (Technicolor) (Walter Wanger Prod. for E. L. Rel.) with Susan Hayward and Robert Preston. Director, Stuart Heisler.
- KARL STRUSS, "Tarzan and the Arrow of Death," (Sol Lesser Prod.) with Lex Barker and Brenda Joyce. Director, Lee Sholem.
- ERNIE LAZLO, "The Lucky Stiff," (Amusement Enterprises—UA) with Dorothy Lamour and Brian Donlevy. Director, Lew Foster.
- LEE GARMES, "The Luckiest Girl in the World," (Enterprise) with Barbara Bel Geddes. Director, John Berry.
- BENJAMIN KLINE, "Miss Mink of 1949," (Wurtzel-20th) with Jimmy Lydon and Lois Collier. Director, Glenn Tryon.
- WILLIAM MELLOR, "Blondes Up," (Lester Cowan-UA) with Groucho, Chico and Harpo Marx and Ilona Massey. Director, David Miller.
- SOL POLITO, "If This Be My Harvest," (Bacher-SRO) with Valli and Robert Mitchum. Director, Irving Rapper.
- HENRY SHARP, "Strike It Rich," (Jack-Wrathier-AA) with Rod Cameron and Bonita Granville. Director, Lesley Selander.

## M-G-M

- CHARLES ROSHER, "Words and Music," (Technicolor) with Judy Garland and Mickey Rooney. Director, Norman Taurog.
- ROBERT SURTEES, "Act of Violence," with Van Heflin and Janet Leigh. Director, Fred Zinneman.

- JOSEPH RUTTENBERG, "The Bribe," with Robert Taylor and Ava Gardner. Director, Robert Z. Leonard.

- CHARLES SCHOENBAUM, "Little Women," (Technicolor) with June Allyson, Margaret O'Brien, Elizabeth Taylor, Janet Leigh and Peter Lawford. Director, Mervyn LeRoy.

## Monogram

- HARRY NEUMANN, "Sheriff From Medicine Bow," with Johnny Mack Brown, Raymond Hatton, Evelyn Finley. Director, Lambert Hillyer.
- WILLIAM SICKNER, "Bowery Comeback," with the Dead End Kids. Director, Reginald Le Borg.

## Paramount

- DANIEL FAPP, "The Heiress," with Olivia de Havilland and Sir Ralph Richardson. Director, William Wyler.
- RAY RENNAHAN, "Streets of Laredo," (Technicolor) with William Holden, MacDonald Carey, William Bendix and cast. Director, Leslie Fenton.

## R-K-O

- ROBERT DE GRASSE, "Baltimore Escapade," with Robert Young, Shirley Temple and John Agar. Director, Richard Wallace.
- HARRY WILD, "Interference," with Victor Mature and Lucille Ball. Director, Jacques Turner.

## 20th Century-Fox

- JOE MACDONALD, "Yellow Sky," (Technicolor) with Gregory Peck and Anne Baxter. Director, William A. Wellman.
- ARTHUR MILLER, "Three Wives," with Jeanne Crain, Linda Darnell, Ann Sothern and Jeffrey Lynn. Director, Jos. L. Menkiewicz.
- HARRY JACKSON, "Chicken Every Sunday," with Dan Dailey, Alan Young and Celeste Holm. Director, George Seaton.
- CHARLES CLARKE, "Sand," (Technicolor) with Mark Stevens and Coleen Gray. Director, Lou King.
- JOSEPH LA SHELLE, "The Fan," with Jeanne Crain and George Sanders. Director, Otto Preminger.

## Universal-International

- RUSSELL METTY, "You Gotta Stay Happy," (Technicolor) with Joan Fontaine and James Stewart. Director, H. C. Potter.
- ARTHUR EDESON, "The O'Flynn," (Fairbanks Co. Prod.) with Douglas Fairbanks, Jr. and Helena Carter. Director, Arthur Pierson.
- WILLIAM DANIELS, "Family Honeymoon," with Claudette Colbert and Fred MacMurray. Director, Claude Binyon.
- FRANK PLANER, "Criss Cross," with Burt Lancaster and Yvonne de Carlo. Director, Robert Siodmak.
- IRVING GLASSBERG, "Black Velvet," (Technicolor) with Anne Blyth and George Brent. Director, George Sherman.

## Warner Brothers

- PEV MARLEY, "Silver Lining," (Technicolor) with June Haver and Ray Bolger. Director, David Butler.
- TED MCCORD, "June Bride," with Bette Davis and Robert Montgomery. Director, Bretna Windust.

- WILFRED CLINE, "Fighter Squadron," (Technicolor) with Edmond O'Brien, Robert Stack and cast. Director, Raoul Walsh.

- KARL FREUND, "South of St. Louis," (Technicolor) (United States Prod.) with Joel McCrea and Alexis Smith. Director, Ray Enright.

- PEV MARLEY, "Night Beat," with Robert Douglas and Helen Westcott. Director, Elmer Decker.

- ROBERT BURKS, "The Fountainhead," with Gary Cooper and Patricia Neale. Director, King Vidor.

## 3000 FRAMES

## PER SECOND

(Continued from Page 269)

A 1/5-h.p., 32-volt universal motor is used to drive the film-moving mechanism, optical plate, and take-up spool. Overloading this motor up to 115 volts increases the speed beyond the normal range. This permits rapid acceleration and maximum speeds without damage to the motor since it is overloaded only for few seconds at a time.

Speed in frames per second is controlled by setting a stop on a builtin rheostat, mechanically coupled to the motor. To limit acceleration strain, this same rheostat, connected in series with the motor, applies a decreasing resistance as the motor comes up to speed and the pointer moves to the stop. At maximum settings, approximately 25 feet of film are required before the camera attains 80% of desired top speed. A motor shut-off switch dial cuts the current when the end of the film is reached and deceleration follows immediately.

In general, the speed at which the camera is to be operated is determined by the speed of the action pictured. Excessive taking speeds increase the problem of adequate lighting for the short exposures involved. A handy formula for computing camera speed is

$$\text{Frames per second} = \frac{40 \times \text{Subject Speed}}{\text{Width of Subject Field}}$$

when subject speed is measured in inches per second and subject field is measured in inches. This formula, however, is based on the assumption that the subject moves in a plane parallel to the plane of the film. Where subject motion is directed toward or away from the camera lens, lower speed may be adequate.

The actual speed of any given action photographed may be timed in absolute units. An argon lamp, connected to normal 115-volt 60-cycle, produces light impressions on the film edge denoting each 1/120 second.

A synchronization switch dial is provided to enable the operator automatically to make or break an external electrical circuit after a portion of the film has



been run. This is useful particularly when a given action is to be photographed only after the camera has attained a predetermined speed.

Standard loading for the Kodak High Speed Camera is a 100-foot roll of specially spooled 16mm. Cine-Kodak Super-XX Panchromatic Film. Where more exposure can be given, Cine-Kodak Super-X Panchromatic Film yields a finer image. In addition to these Eastman reversal films, Super-XX Panchromatic Negative Film may be used as can Kodachrome Film when ample light is available. Fifty-foot rolls of these materials are available on special order where 100-foot rolls are not needed.

Because of its light weight and compactness, the Kodak High Speed Camera has proved especially valuable in industry, both in design of high-speed equipment and in trouble shooting. Not only can the camera easily be transported anywhere in a shop, but—unlike flash discharge photography which must be carried out in subdued light—it may be used in normal room light or daylight and its picture cycle embraces a long enough period of time—1½ to 5 seconds—to depict the full cycle of the majority of high-speed industrial operations. Thus if a given part is malfunctioning the camera operator is assured that somewhere in his footage the failure will be recorded for study.

The importance of such visual studies cannot be overestimated. Industrial engineers and designers are constantly called upon to increase the speed at which machines and equipment may be operated. As a result, they need accurate knowledge of the time, space, and force relationships

which occur between parts that move too fast for visual observation.

Consequently, the Kodak High Speed Camera has been used to study such varied industrial problems as mechanical power transmission, metal cutting and forming operations, the flow of coolants in metalworking, effects of vibration, electrical arcing, aircraft behavior, fuel injection, the mixing of fluids, and metal flow in welding. This list is by no means exhaustive.

The solution of a typical industrial problem through use of this camera involved a machine embodying a ratchet feed that was continually out of service for replacement of the ratchet and pawl. Six times each second the pawl had to index a six-tooth 2¼-inch ratchet wheel with .01 second allowed for engagement. Neither ratchet nor pawl was standing up under this service.

Motion pictures taken with the Kodak High Speed Camera showed the pawl bounding off the ratchet tooth so that maximum force was exerted when the contact was small. Naturally this caused the corner to wear rapidly. A change in the pawl shape to reverse the rebound force eliminated the trouble.

While pictures of this type are primarily intended for engineering use, they often may prove useful in sales promotional films to illustrate a particular point about a machine or process. Incorporating such footage in promotional films provides visual proof of engineering claims and leaves the prospective purchaser convinced that parts operate as intended. Proof of this nature offers a sales argument of real force. ★ ★ ★

## TRANSITION LENS FOR TELEVISION

(Continued from Page 266)

as his automobile rolled up Pennsylvania Avenue toward him. Suddenly there was a renewed ovation from the crowds of spectators lining either side of the Avenue, and the President doffed his hat.

Walker instantly switched to his telephoto lens, capturing a well timed close-up of the President as he removed his hat and bowed, smiling, to the cheering throng. Years later a print of the reel containing this memorable footage was presented as a gift to the President's widow by the newsreel company.

Subsequently, Walker continued his explorations with transition lenses, developing the automatic, multi-element zooming lens for both 35mm. and 16mm. cameras.

With the rapid development of television photography, the tele-camera and its peculiar problems attracted the attention of Joe Walker who makes it a point to keep abreast of every development in

photography—still, motion picture and video. He recognized the very same problems in television photography that had earlier beset the motion picture cameramen with the advent of sound.

In the early days of talking pictures, a lens was designed by Walker that would permit a quick transition from a long shot to a closeup, and vice-versa. It had two fields of view and was the forerunner of the present Duomar lens. The original transition lens was used recently to good effect by Orson Welles in Rita Hayworth's "Lady From Shanghai."

It became a simple matter for Walker to redesign this lens for the longer focal length and greater covering power required by the television camera. While modern television cameras have multiple lens turrets affording all the facilities of turreted motion picture cameras, actually the turrets are seldom used in making



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transitional shots during shooting. Instead, two or more cameras are used on the set or event—each operating with lenses of different focal lengths—and cuts between cameras are effected electrically by the operator at the camera control panels.

Earlier it was found that transitions made by swinging the television camera lens turret created a side motion of the entire picture image on the screen that was very disturbing to the eye. So those television studios fortunate to have the equipment, remedied this by using two or more cameras and cutting from one to the other, as prescribed in the script.

The answer to this problem, Walker foresaw, was a lens that would afford a quick change from long shot to closeup without creating any disturbing visual effect on the video screen. And as television's requirements, more often than not, were for a simple switch from long shot to closeup, or closeup to long shot—rather than a zoom effect—Walker's inventiveness enabled him to readily adapt his original two-image lens to television's needs. Subsequently the lens was appropriately tradenamed the Duomar.

The Duomar has two different fields of view. The movement of a lever by the operator changes the field from long shot to closeup, or vice versa, with a pleasing melding of the two scenes marking the transition, instead of the abrupt side motion "wipeoff" that occurs when the television camera's turret is employed for effecting transitions.

By moving the lever (indicated in photo by arrow No. 1) quickly, the result is an almost instantaneous "cut" from one field of view to the other. If the lever is moved moderately slow, a dissolving effect is obtained between the two.

Unlike the continuous zoom lens, of which Walker has made several for use in motion picture photography, the Duomar can be made in any lens speed and with a very high degree of optical correction. Speeds of  $f/2$  have been found quite practical; however, in large television studios the speed of  $f/4$  is sufficient for practically all purposes. Moreover, size and weight of the lens must always be considered. The faster the lens, the larger it must be.

The Duomar lens pictured here is 12 inches in length and the image range is between that of 8 and 16 inches focal length. The lens requires a lightweight bracket to support it before the camera. The bracket shown in the illustration is made of aluminum and is held in place by an extension which fits between the camera and the tripod head.

The Duomar is not an auxiliary lens. It replaces the regular television camera lenses. The range of the transition is pre-set by adjusting two collars mounted on a shaft paralleling the lever opening.

Early tests of the Duomar lens on the "Queen For A Day" and "Heart's Desire" video shows revealed that, in addition to operating the lens lever, the operator also had to adjust his camera simultaneously in order to keep the lens centered vertically on the scene or subject. Walker soon corrected this and now centering becomes automatic, the range of the centering action being pre-set by adjusting a small knob immediately below the front of the lens, indicated by arrow "2" in lower photo on page 266.

The Duomar lens is fully patented. Harry Lubke, director of Television for Don Lee, and his video cameraman Her-mas Smith were the first to employ it. Walker is making the lens available to any television company for experimental or regular program use. ★ ★ ★

## GRAND OPERA IN 16MM.

(Continued from Page 274)

have the additional interpretive faculty of English dialogue and the freshness and realism of screen presentation to simplify opera for every type of audience.

On the screen, the arias are sung in the native tongue of the original opera. The dialogue which precedes an aria is spoken in English and thus fully explains and sets the scene; the aria continues the mood.

Although this film marks grand opera's first "adaption" to its new medium, Maestro Peluso says that it was not necessary to alter the original music or arias in any way, except for some of the lengthier musical compositions, which were shortened to allow for more explanatory dialogue. But the essentials of the plot and music were not changed in the streamlining given the screen production.

The musical score and arias were pre-recorded by Metropolitan Opera star Emily Hardy, Frank Travaglione, Giovanni Zavatti and conductor Peluso. Those essaying principal roles on the screen sang and spoke their lines in accompaniment to playback of the original recording, but this was not recorded. The pre-recorded musical score and arias were dubbed in.

Although this was a 16mm. film production, it was handled in the most professional 35mm. manner. Both the technicians and cast were recruited from among regular studio workers. The casual observer accustomed to watching typical Hollywood studio production methods would hardly have noticed any difference in the procedure, except when the camera blimp was raised to reveal within it a Mitchell 16mm. Professional camera instead of the familiar Mitchell 35. Since this camera is almost identical in design and operation to the 35mm., it presented no difficulties to our 35mm. camera operator. ★ ★ ★

## MUSIC FOR MOVIES

(Continued from Page 270)

against such music because it happens to have been written as accompaniment for screen drama.

Composing and recording background scores is a highly specialized and rather intricate business. Heading the musical department of each studio is a musical director who supervises the creative efforts of anywhere from eight to twenty composers, arrangers and directors. It is his task to assign various pictures to individual composers and to work with them in developing themes and orchestrating completed scores. Occasionally the musical director personally composes the score for an important picture, and quite frequently several specialists work together on a single score. One may write the score, another will arrange it for the orchestra, and still another will conduct the orchestra in actual recording of the music.

Although scoring procedures vary somewhat with particular studios, the basic techniques are similar. Usually the composer writes his themes while the picture is still on the sound stages or in the cutting room. When the picture is completed, every scene, action and bit of dialogue is accurately timed by a mechanical device, and the composer begins the operation of fitting his music reel-by-reel to the actual content of the film. Elaborate cue sheets enable him to precisely synchronize musical ideas to the celluloid.

The recording is done a reel at a time on the recording stage. The conductor rehearses a large symphonic orchestra repeatedly, while watching the picture projected on a screen at the back of the stage. After several rehearsals a cutting of that portion is made, and as soon as one reel is okayed, the conductor goes on to the next. The utmost precision is needed to get the music to closely match the picture.

Max Steiner, regarded by many as the industry's foremost musical director, has evolved his own highly successful formula for film scoring. He maintains that "the ear must hear what the eye sees," and with this in mind he asks himself, when viewing a completed picture for the first time, "What does it sound like?" He then analyzes the main characters and situations of the story and composes a representative theme for each.

These themes are then turned over to a timing expert who writes out intricate cue sheets to match music with action. Mr. Steiner frequently composes what is known in the trade as "Mickey Mouse Music." More clearly defined, this is the kind of music that closely follows the action of the characters. If a player runs upstairs, the music does likewise—if he falls down, the music takes a tumble, also.

When this specialized timing is done, the composer then completes the transi-



tions and interludes for each reel, after which the score is turned over to the orchestrator to be arranged for recording. Mr. Steiner works closely with the arranger to make sure the desired instrumentation is created. He also sits in on the re-recording session (during which music is "mixed" with dialogue and sound effects) in order to more closely control the volume and modulation of the music in relation to the other sound elements.

Max Steiner has thrice won Academy awards for his scoring of "The Informer," "Now Voyager," and "Since You Went Away." His other outstanding scores include: "Gone With the Wind," "Sergeant York," "Casablanca," "Mission to Moscow" and "Saratoga Trunk." His brilliant score for the motion picture, "She," has been given many concert performances by leading symphony orchestras. Mr. Steiner's musical themes are so melodic that several have been published as popular songs, notably the themes from "Now Voyager" and "Saratoga Trunk." He is one of the foremost proponents of background scores as music worthy of the concert hall.

Commenting on the aforementioned controversial issue, Mr. Steiner says: "A major victory was won when producers came to realize that the score should not always be completely subordinate to the story. Formerly, it was unheard of that a scene should be lengthened so that a musical idea might be more effectively developed. Now, if I need ten more feet of action to complete what I have in mind I can usually get it. That is a definitely encouraging sign." ★ ★ ★

## INFRARED FILM

(Continued from Page 265)

"chalking" of the features. In "Fort Apache," no makeup of any kind was used except in the infrared shots.

The shades of brown makeup will vary with the filter used, which should be a 23A, 25A, and, rarely, a 29F. Choice of filter will depend entirely on the background, sky and clouds. In several instances I used a 23A filter and then shot the scene to follow using a 29F filter, and succeeded in maintaining a balanced density in both long shot and closeup.

In using only the red filters it is well to remember that all reds in the scene are consequently highlighted in color and with a corresponding degree according to the filter used. All props normally containing red, such as flags, insignia, etc., should be replaced with duplicates in which the red colors have been replaced by light or medium brown, and the filters for the shot carefully selected.

In balancing connecting shots, the sky should also come in for careful evaluation in the selection of filter to be used for

long and close shots. A ground haze can cause serious trouble if shot in a back-light or back cross light. Where haze prevails, a few test shots developed on the spot, will indicate the best filter to use, and at the same time convince you of the value of infrared film for getting dramatic pictorial effects that would not be possible under the same conditions with any other emulsion.

For the 16mm. movie maker, amateur or professional, infrared film offers many possibilities, both pictorial and timesaving. Where the filmer has not the lighting facilities to photograph actual night shots, infrared and filters will enable him to photograph such shots in daylight. The 16mm. professional will find many uses for the film to enhance production values—something he can easily prove by making a few test shots.

There is no definite emulsion speed indicated for infrared film for use in daylight. Only last month, I contacted Eastman's representative, who was visiting in Hollywood, and could get no definite information regarding this.

In checking my exposures, made during the past few years with this film, I established the following exposure table:

Exposure Meter	Reading	Filter Used	Exposure
General Electric	150 Foot Candles	25A	F/6
General Electric	150 Foot Candles	23A	f/8
General Electric	150 Foot Candles	29F	f/3.5
Norwood Director	250 Foot Candles	25A	f/6
Norwood Director	250 Foot Candles	23A	f/8
Norwood Director	250 Foot Candles	29F	f/3.00

—all of which indicates an emulsion speed of 8 for the film. This may vary greatly, however, depending upon the color of backgrounds and the density desired; so actual tests under given conditions, coupled with past experience should be your safest guide.

For the successful use of infrared film in photographing "Fort Apache," considerable credit is due director John Ford; for without his understanding, cooperation and assistance, the dramatic pictorial shots that mark the picture would not have been possible. Indeed, Ford was as eager as I to use the film and to leave nothing undone to insure the greatest possible results from it.

## BULLETIN BOARD

(Continued from Page 260)

reveal details of the new film treatment, two film strips were screened for the group, one shot under normal conditions and the other deliberately under-exposed by one full stop and then subjected to the new process. Both strips screened with identical results.

S.M.P.E. reports that Czechoslovakia's film industry has established a new standard projection speed of 25 frames per second for 35mm. sound film.



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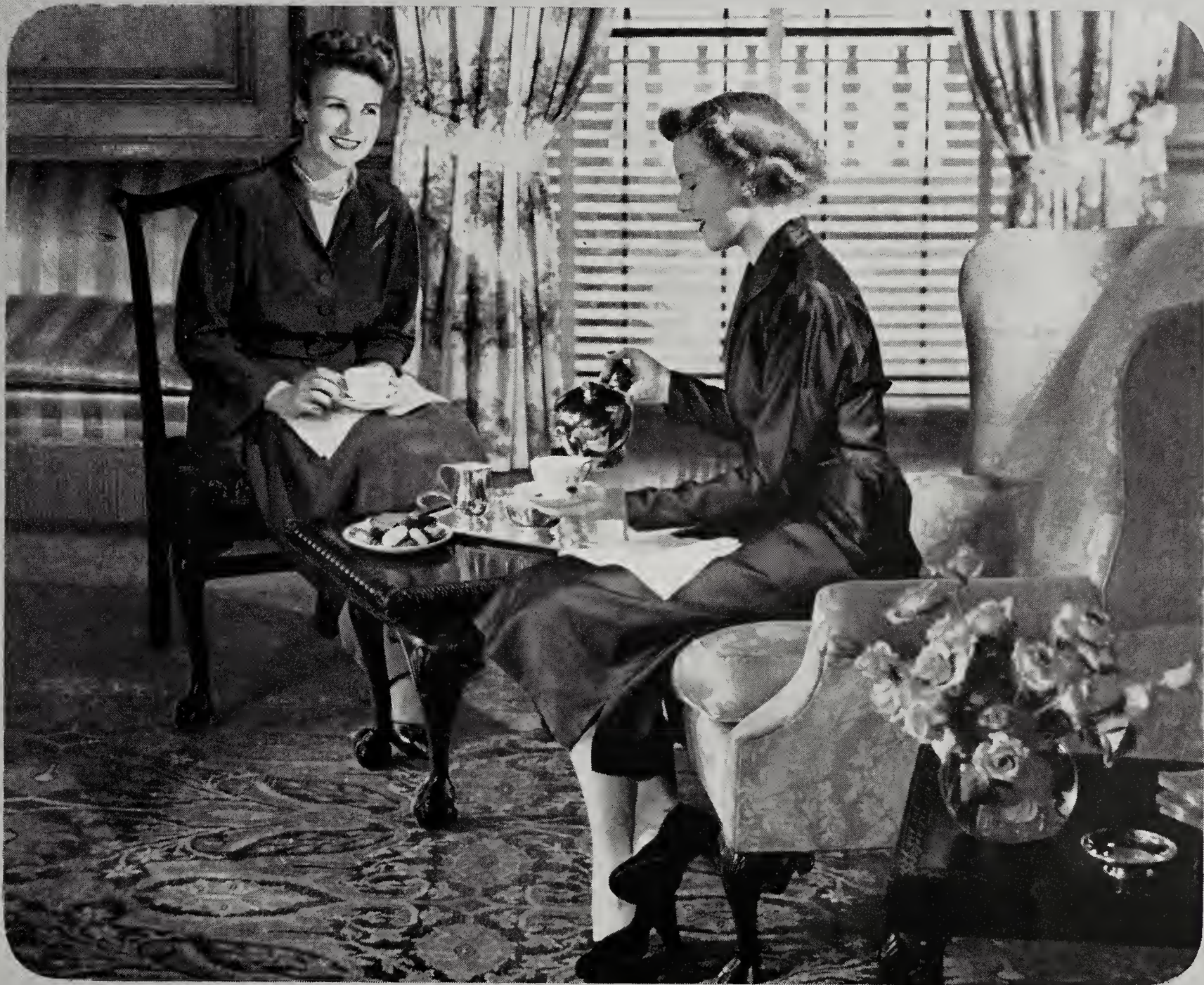
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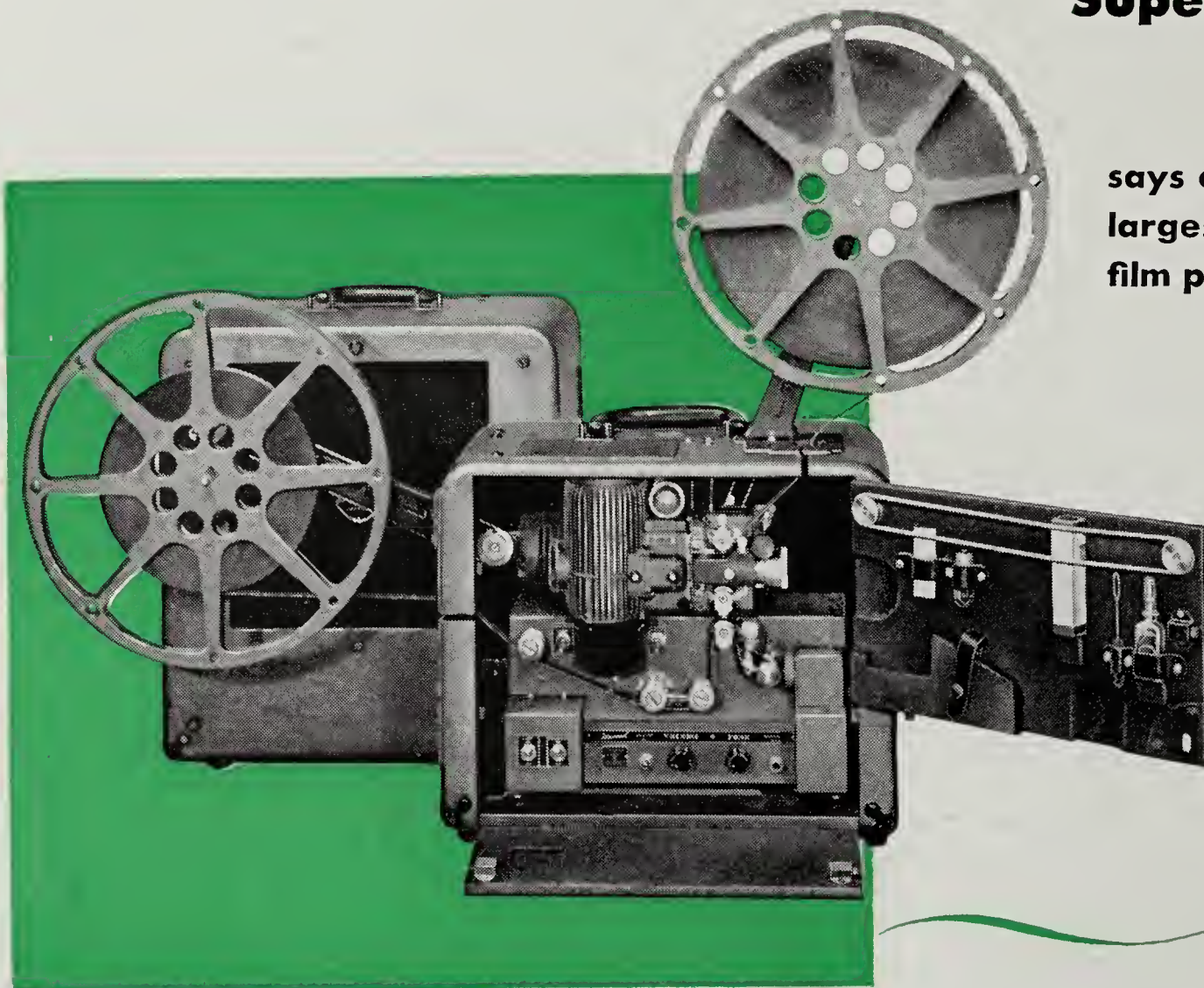


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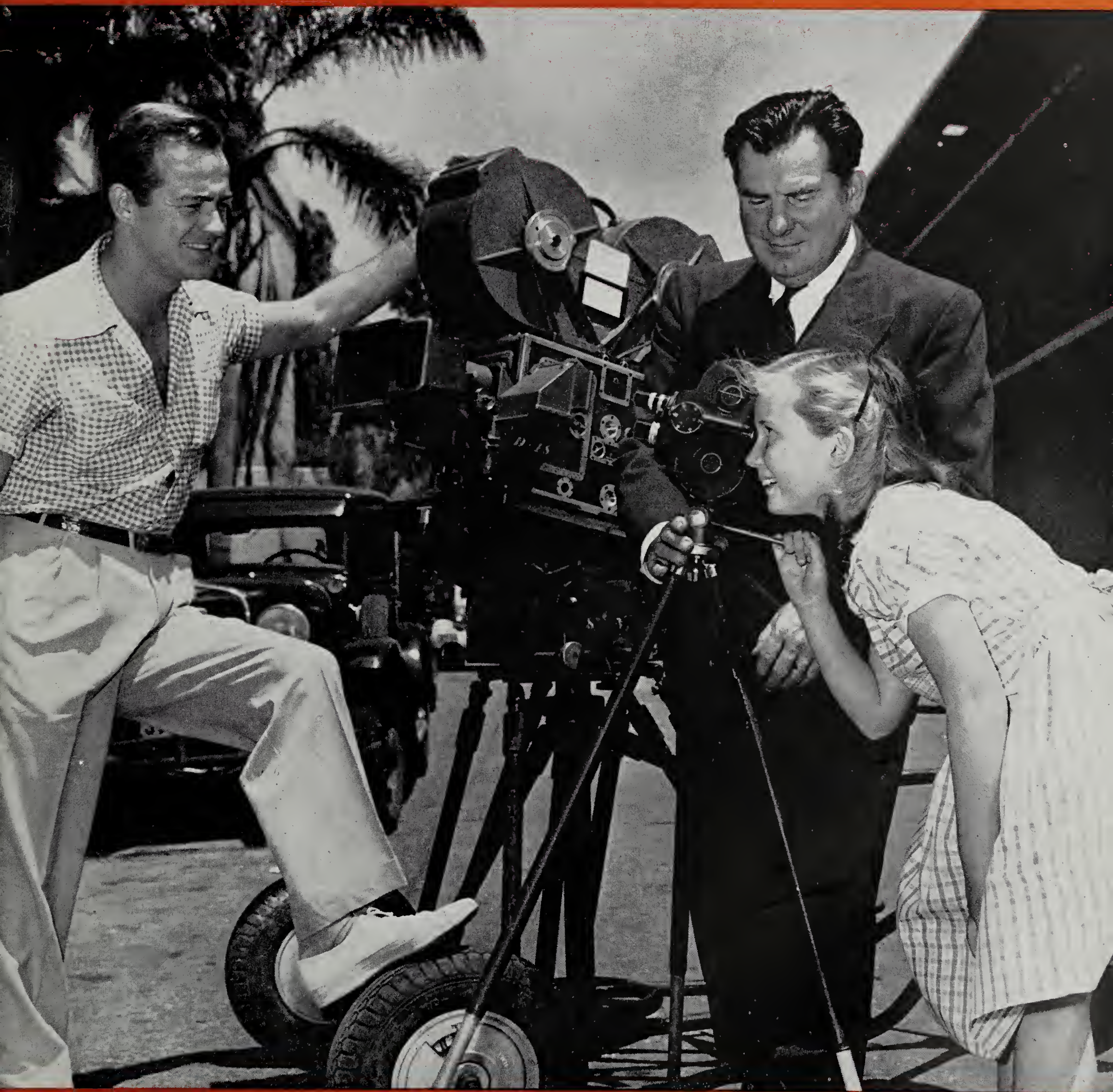
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# Cinematographer



THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

SEPTEMBER  
1948



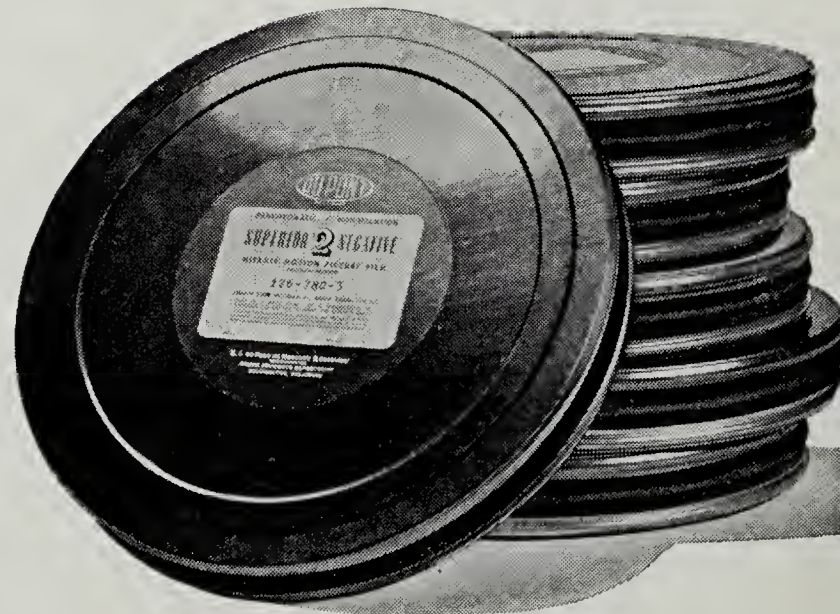


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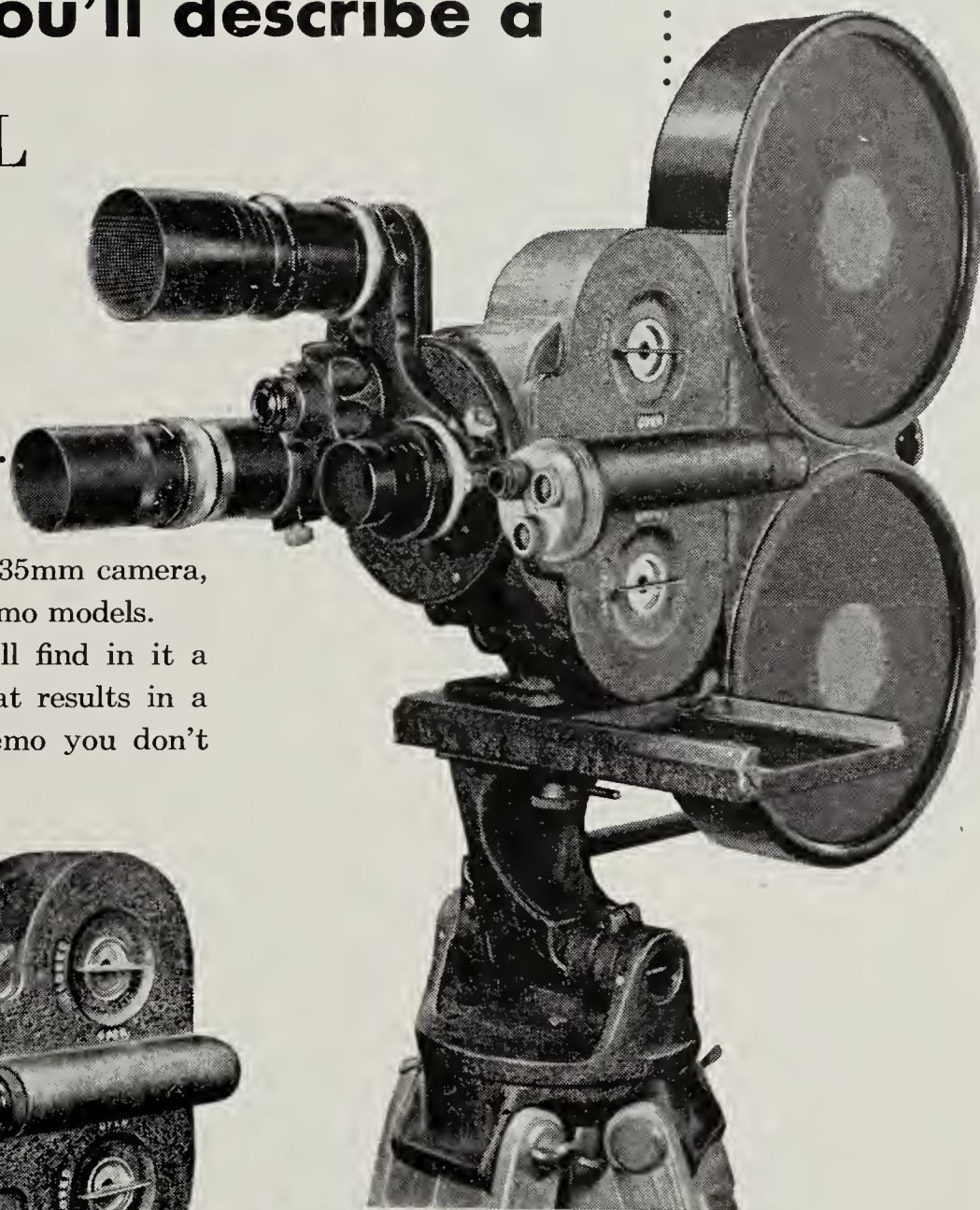
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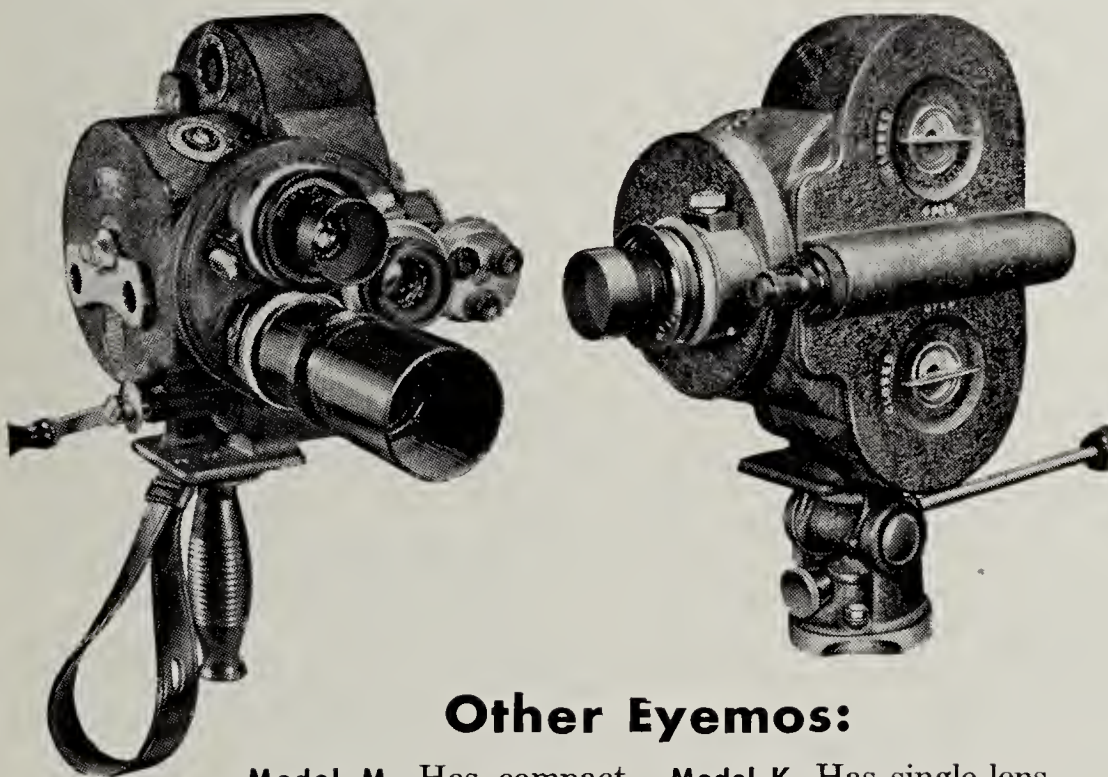
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# Hollywood Bulletin Board

**JAMES WONG HOWE, A.S.C.**, returning soon to China to resume production of his picture "Rickshaw Boy," will record all the sound on magnetic tape, using one of Len Roos' recently developed magnetic tape recorders. Tape used is specially treated 16mm. film. Howe will also carry along a compact portable 110-v generator to provide all power necessary for cameras and recorder.

**IMAGINE, IF YOU CAN**, a cinematographer hoping for clouds and fog instead of sunshine on a picture assignment. Well, that was A.S.C. member Elmer Dyer's prayer when he left recently for Arcata, California, to photograph in color the recently completed FIDO fog dispersal system on the government airport there. Much of the filming will be done at night, and Dyer will use two B&H Specialist cameras and commercial Kodachrome film.

**JOHN W. BOYLE** and Charles Rosher have been appointed a committee by the Board of Governors of the American Society of Cinematographers to work with Grant Leenhouts and Wells Root, producer and writer respectively, on the Motion Picture Industry Film Project short subject which will tell the story of the Directors of Photography and the camera craft in the industry.

**JOHN ALTON, A.S.C.**, is putting the final polish on the script for his forthcoming book, "Painting With Light," to be published by MacMillan Company. Publishers are said to be so enthusiastic over Alton's script, they have commissioned him to do another book, this time a novel.

**EVERYBODY WANTS INTO** the video pictures act, according to a recent Hollywood survey which revealed that at least 51 companies have been formed there to make motion pictures for television. In addition, there are companies in New York, Chicago and other cities that have plans to enter the field or are already in production on such films. More recently, CBS signed with an independent producer for a series of 13 television shorts at a reported figure of \$7,500 each.

**GLEN MacWILLIAMS, A.S.C.**, who has recently become an independent producer of 16mm. business films, premiered his first production, "Forever Angler," in Hollywood recently. Film, sponsored by a leading manufacturer of sportfishing

tackle, depicts the fishing sport from trout stream to deep sea and is noteworthy for its special microscopic sequence showing the treatment of fish eggs and hatching of young trout.

**DEEPEST SYMPATHY** is extended by all members of the American Society of Cinematographers this month to Norbert Brodine, whose mother passed away recently; to Leo Tover, whose wife passed suddenly last month after a lingering illness; and to the widows and survivors of Robert C. Bruce, one-time A.S.C. member who died of pneumonia a few weeks ago after returning from a location trip in Mexico, and Sam Landers, also a former member of the Society. Other notables called by death recently who were prominent in the motion picture industry were David Wark Griffith, and Edward H. Amet, inventor of the Magnigraph, said to be the forerunner of the motion picture camera.

**OLLIE COMSTEDT, A.S.C.**, Swedish producer-director-cameraman arrived in Hollywood recently, bringing with him a set of rare zoom lenses, one of which is the only one of its kind in existence, and valued upwards of \$12,000. While here, Comstedt will negotiate with cameramen and producers for use of his lenses on lease basis. Lenses may be used on either 16mm. or 35mm. cameras. One features an auxiliary lens for ultra closeups and a set of filters. During the past year, Comstedt photographed a series of color films in Scandinavia, using his zoom lenses.

**RAY CORY, A.S.C.**, veteran process photography expert currently with Columbia Pictures, has purchased the famed 4400 acre Double-Arrow Ranch located near

(Continued on Page 324)

## NOTICE

### To All A.S.C. Members

The Society's second annual "Ladies' Night Dinner and Dance" will be held at the A.S.C. clubhouse in Hollywood Saturday evening, September 11th, at eight o'clock. It is to be a semi-formal affair and admission is restricted to members and their ladies. Invitations are now in the mail and prompt attention to the "RSVP" is requested.





## ... tributes and billing

THERE ARE indications that some motion picture critics, at least, are not unmindful of the Director of Photography's contribution in the making of a successful picture. In this space in earlier issues we have pointed out the scant attention paid the cinematographer and his work by the average film reviewer. It is therefore a pleasurable surprise to find that during recent weeks, certain film reviewers have paid tribute to the artistry of cameramen on certain productions, although not all the cameramen are A.S.C. members, viz:

"Ray June's camera work is first rate throughout." (M-G-M's *A Southern Yankee*).

"The technical contributions are expertly accomplished, particularly the photography of John MacBurnie." (Republic's *Marshall of Amarillo*).

"And surely Gabriel Figueroa's breathtaking work cannot be overlooked this coming March at Oscar-time." (Steinbeck's *The Pearl*).

It is also interesting to note, especially in light of what was written here last month, that in a 2-column display advertisement in a Los Angeles daily newspaper, which announced the Mexican film, *Rio Escondido*, cinematographer Figueroa's name received equal billing with that of Emilio Fernandez, the director.

This is a precedent that could well be emulated by American producers and exhibitors. It is just possible that the American public, too, is well aware of the fine work of certain of our Directors of Photography, and that it is an added incentive to see their pictures when the names of the cameramen also appear in the billing.



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AMERICAN

# Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

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**VOL. 29**

**SEPTEMBER • 1948**

**NO. 9**

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### ON THE COVER

WILL 9-year-old Mary Clarke, daughter of A.S.C. president Charlie Clarke, one day become the first woman director of photography? With the technical assistance of her illustrious dad, Mary, who is an avid 16mm. movie maker, focuses her Filmo for a closeup of Mark Stevens. Stevens stars in "Sand" which Clarke is currently photographing for 20th Century-Fox.

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBSCRIPTIONS: United States and Pan-American Union, \$2.50 per year; Canada, \$2.75 per year; Foreign, \$3.50. Single copies, 25 cents; back numbers, 30 cents; foreign single copies, 35 cents; back numbers, 40 cents. Advertising rates on application. Copyright 1948 by A. S. C. Agency, Inc. AUSTRALIAN REPRESENTATIVE: McGill's, 179 Elizabeth St., Melbourne.



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### Lens Standards

Three important new standards affecting the performance of the lens of a camera are described in an article by Irvine C. Gardner of the National Bureau of Standards in the July issue of "Industrial Standardization." These standards define the focal length of the lens in more exact terms than has been the case up to the present time and provide methods of designating and measuring apertures of photographic lenses.

The three new standards are part of a series being prepared by a committee representative of a wide variety of national technical and trade groups.

### Color Analyzer

A new machine which can tell blue from blue and red from red has been developed by scientists working in Binghamton, N. Y.

An electric color analyzer so sensitive that it will detect color differences too small to be seen by the average human eye was announced recently by the Ansco Division of the General Aniline & Film Corporation.

The instrument can measure 1/100,000,000 of the light emitted by an automobile headlamp.

Production of Ansco color film for the armed forces prompted the need for such a device back in 1943, and it is expected to play an important part in cancer research on the basis of recent studies which indicate that blood changes color during progression of the disease.

Although designed primarily for photographic work, the instrument, known as the Ansco color densitometer, can be adapted to scores of other uses in many other fields such as measuring or matching colors in textiles, paints and dyes, and in medical research.

### Lens Tester

Development of a precision camera for testing exact qualities of new lens formulas is announced by Bausch & Lomb Optical Company's research and engineering division. The new camera is used for testing all types of photographic lenses ranging from the tiny home movie to eight-inch focal length telephoto lenses.

### Light Filter

A new filter which is fitted over photo-flood lamp reflectors has been developed by the Acme-Lite Mfg. Co., Chicago. Tradenamed "Litefilter," the device is

said to filter out destructive yellow and red light rays. By its use the color and character of the light is changed without reducing light intensity.

### 10 By 14 Ft. Filter

The greatest number of scenes involving simultaneous interior and exterior action ever filmed for a single Technicolor motion picture are now being photographed for Warner Brothers' "The Younger Brothers" by Director Edwin L. Marin and William Snyder, A.S.C., through use of a large 10x14-ft. neutral density plastic filter.

This filter, which won the 1947 Academy Award for scientific and technical achievement for its developer, James Gibbons of the Burbank studio's prop shop, is designed to decrease exposure without color correction through cutting down brilliant sunshine to match ordinary interior lighting for Technicolor.

First use of the screen for Technicolor was introduced by Sid Hickox, A.S.C., for scenes for "One Sunday Afternoon," and Marin and Snyder are first to adopt it as part of standard production equipment.

### Positive Sound Track

Kodak Research Laboratories, in a recent Monthly Abstract Bulletin, reports acquisition by Kodak of a patent covering a method for producing a positive soundtrack by printing from a negative sound track onto a multi-layer photographic film that is processed by reversal. Improved sound reproduction is said to be thus obtained.

According to the method, the soundtrack is printed from a negative, the picture areas of the film are exposed as usual to a scene or positive image, and the film is developed in a normal black-and-white developer to produce negative silver images in the picture area and a positive sound-record in the sound-track area. The sound-track area only is then fixed by edge application of a special hypo bath. The film is then washed. The film continues through its regular processing course for the production of reversed images in the picture area by selective re-exposure and color-development. It is then treated in a ferricyanide bromide bleach bath to convert the silver images in both picture and sound-track areas to silver halide.

The film is then treated in a dilute hypo solution for from 30 seconds to 2

(Continued on Page 325)



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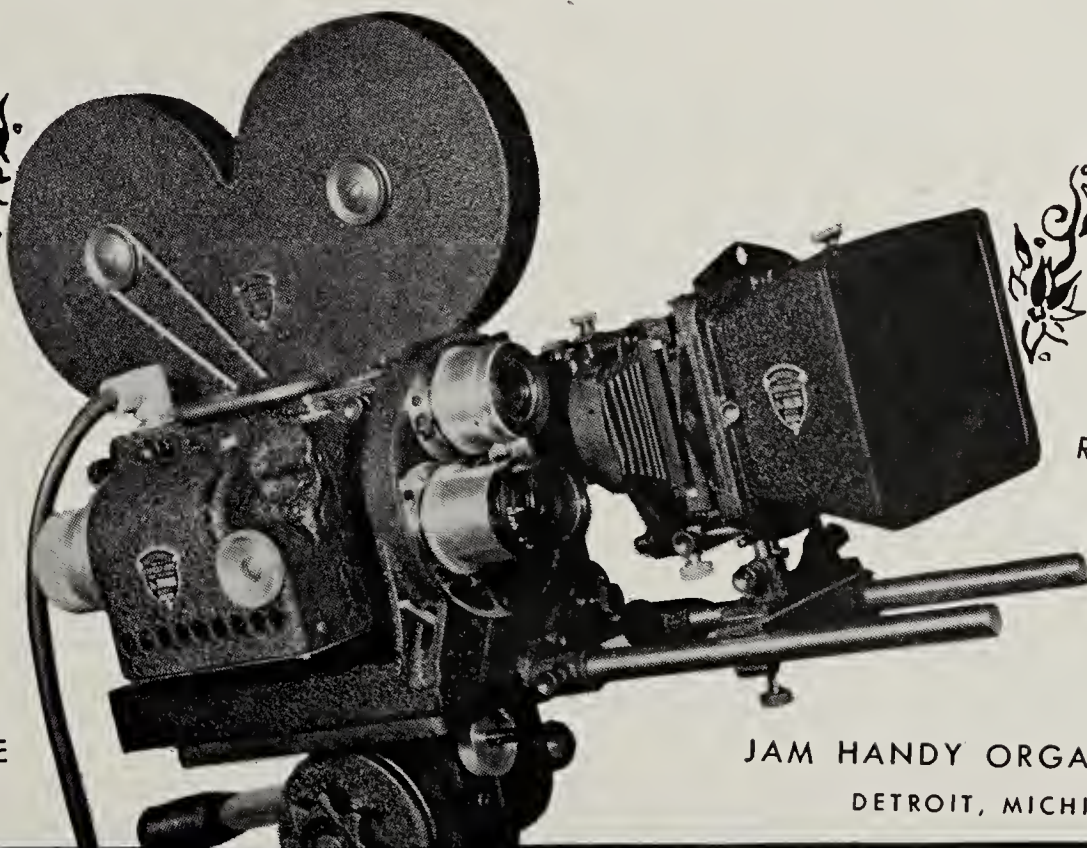
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# FIRST Anniversary OF THE *Mitchell* 16mm PROFESSIONAL

The Mitchell Camera Corporation takes pride in announcing that during the first year on the market the new MITCHELL 16mm PROFESSIONAL has entered every field where photographic perfection is required—including entertainment, education, sports and science. We wish to extend our sincere appreciation to all our customers for their continued confidence, which has been justified by the recognition of Mitchell equipment as standard by motion picture producers throughout the world.



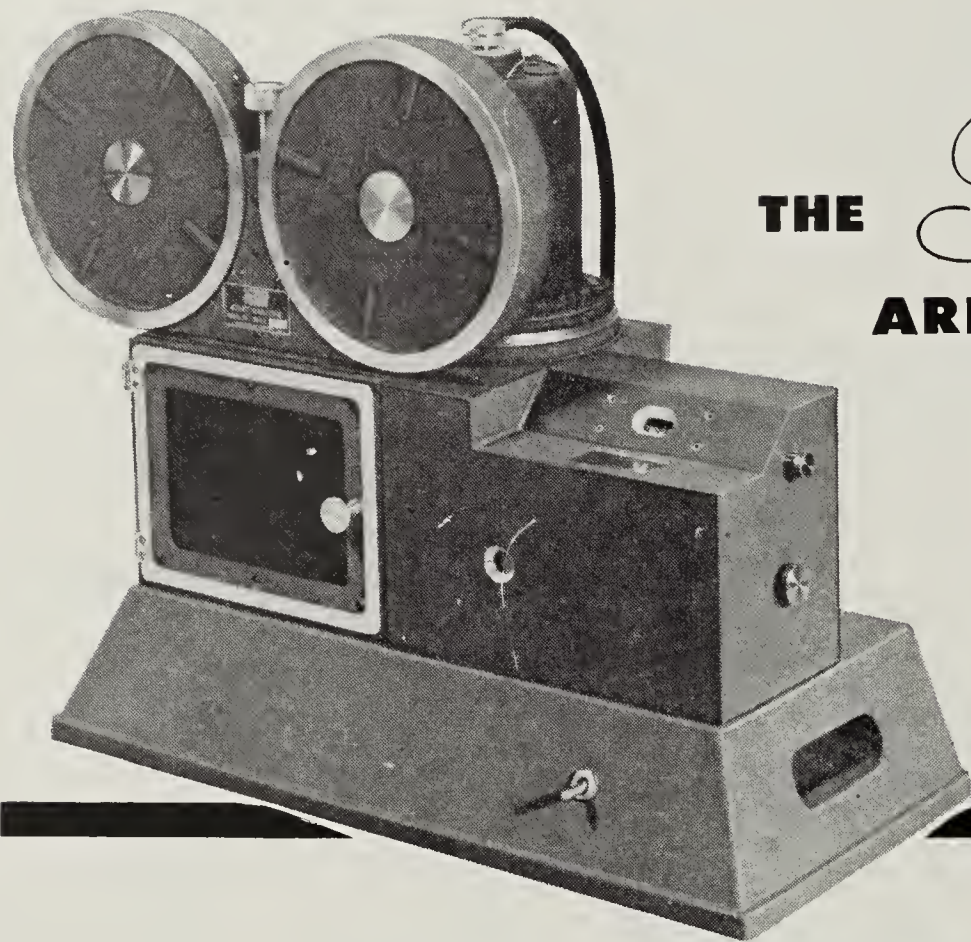
## *Mitchell Camera* CORPORATION

666 WEST HARVARD STREET • GLENDALE 4, CALIFORNIA • CABLE ADDRESS: "MITCAMCO"  
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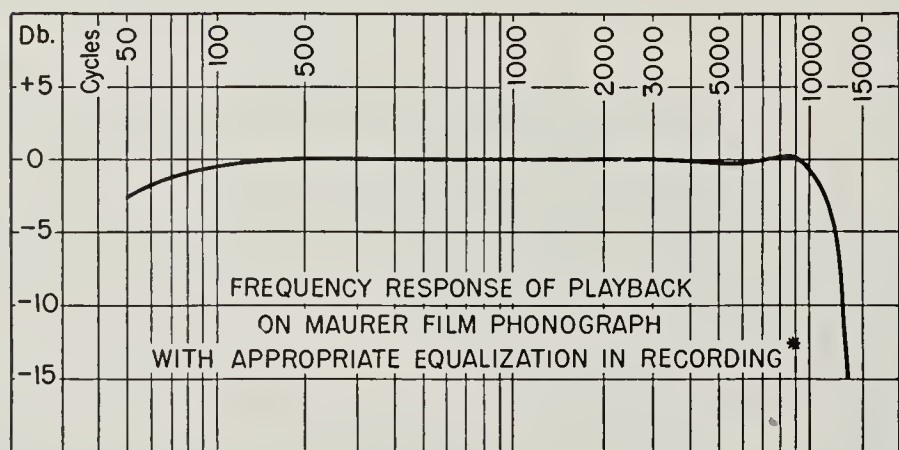
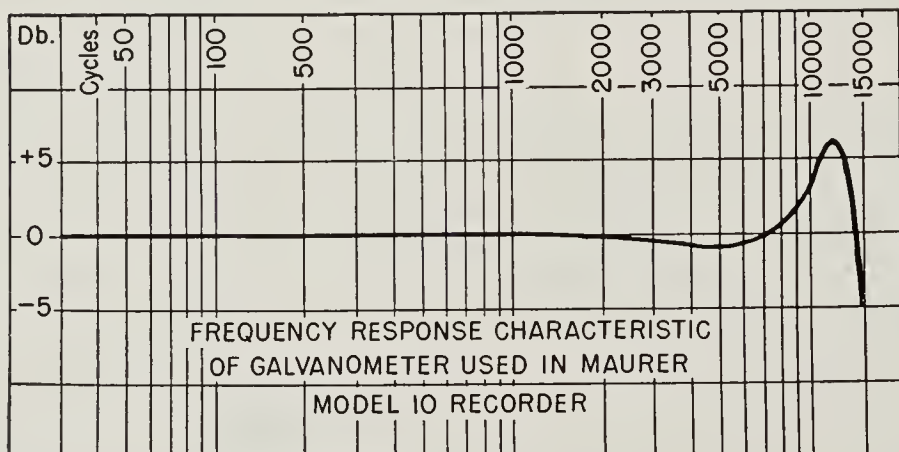
85% of the motion pictures shown in theatres throughout the world are filmed with a Mitchell





# THE *Future* ARRIVES DAILY

**... and finds Maurer  
16-mm equipment ready  
to meet its demands**



\*For those who may have been educated to believe that such a result is not possible with 16-mm film, we shall be glad to demonstrate that it is not only possible, but practical commercially now.

Since 16-mm sound projectors to date have been designed to reproduce only to about 6,000 cycles per second, ordinary sound-on-film recorders have been built to record only that range. But not so with the Maurer!

Anticipating a definite demand for a finer quality of recording including the higher frequencies, the Maurer Recording Optical System was designed to produce an extremely fine line image that makes possible the recording of frequencies well beyond 10,000 cycles, with very low distortion. The galvanometer of the postwar Maurer Model 10 System is tuned to 12,000 cycles. This is the model that has been sold to the trade for two years.

Now television has arrived—and it has brought a demand for high fidelity 16-mm recording. Only Maurer was ready with the equipment to meet this need, proving again the value of the Maurer policy of building, not merely for the present, but for the future.

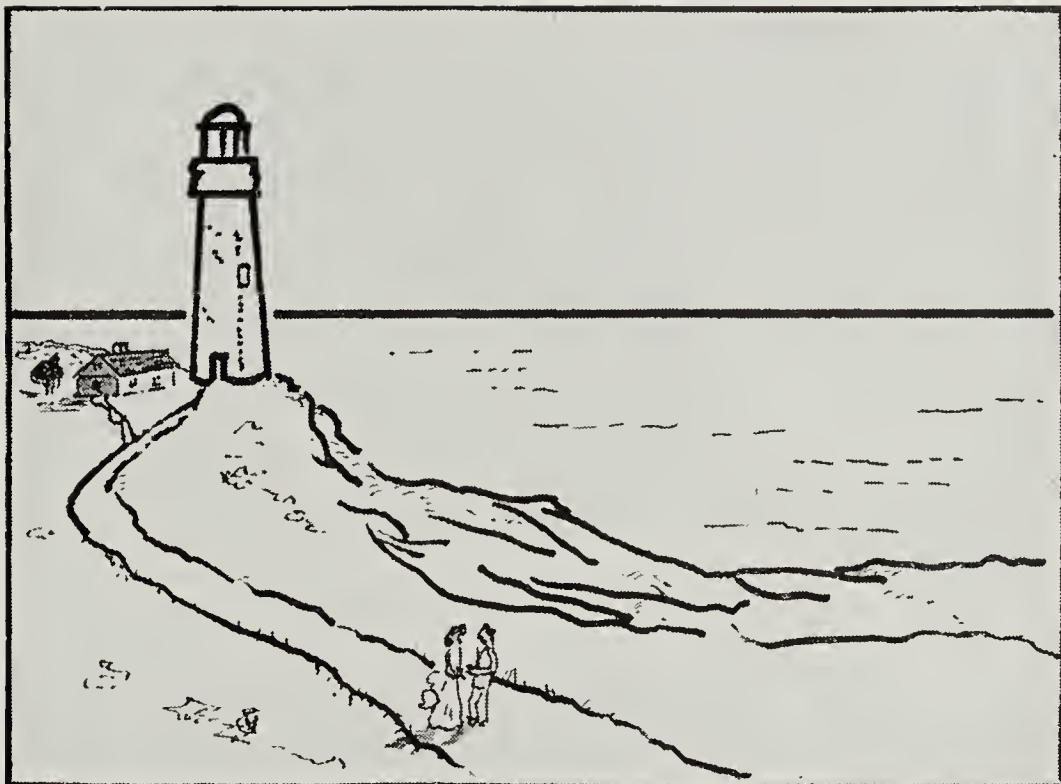
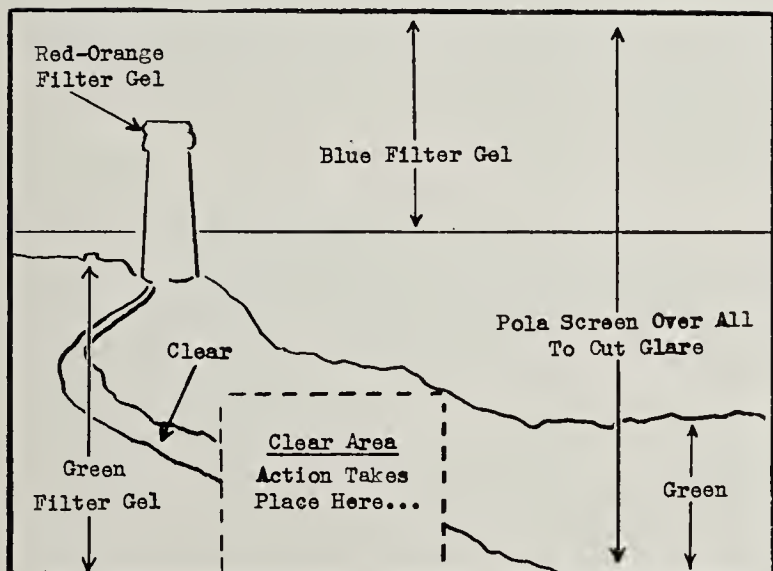
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Professional Motion Picture Cameras and  
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ABOVE SKETCH represents an approximate scene which author was called upon to photograph in color. Good color was lacking in the scene, however—the sky was dull and there was considerable glare from the sea and the foreground, too, was virtually colorless. Employing his “kaleidoscopic filter” technique, Fernstrom placed before the camera lens a composite filter which enabled him to “paint” color into the scene by shooting through colored gelatins. How the gelatins were arranged to form the composite filter is illustrated in diagram at left.

**W**ITH ECONOMY the keynote today of every motion picture production operation including cinematography, every cameraman is digging down deep into his bag of tricks in order to cut corners and do his bit to shave production costs. One of the expense items of color productions that can be materially reduced if not eliminated entirely is that of putting color in large expansive scenes where none existed before, in order to obtain a pleasing over-all color balance in the scene. Instances are common where virtually acres of an exterior location have had to be sprayed with green paint in order that they might register properly on Technicolor or Cinecolor film. Fences have been painted and houses and barns tinted or subdued in order to satisfy the color technician’s critical eye.

There is a simpler way to do this that will eliminate the need for spray painting or at least reduce its application to an area only a few square feet in extent. Also, this method enables a wide new range of lighting control over exterior scenes, even for black and white photography.

Before the war, I wrote an article on the subject of “Motion Painting” that ap-

peared in THE AMERICAN CINEMATOG-  
RAPHER in which I described the use of  
graduated N.D. filters and pola screens in  
shooting color. What follows here will  
enlarge upon that technique and develop  
what I term Kaleidoscopic Filter shots.

Peering through one of my kaleidoscop-  
ic filters would suggest a view through a  
kaleidoscope with its multicolored pattern  
made up of a myriad of transparent col-  
ored pieces of celluloid of assorted shapes  
and sizes. Here, however, the resemblance  
ends, for the kaleido filter’s colored gel-  
atins are arranged in a predetermined pat-  
tern and have as their purpose the func-  
tion of imparting color in a scene where

none exists, to correct a flat or over-bril-  
liant sky, or to subdue glare from an ex-  
panse of water—or all three.

Briefly, the kaleidoscope filter consists  
of a panel of clear optical glass of a size  
to fit over the front of the camera’s matte  
box where it is fastened securely. With  
this glass in place the camera is racked  
over to permit viewing the scene through  
the lens or viewfinder and, of course,  
through the panel of clear glass. The de-  
sired composition is selected and the cam-  
era locked in position. Now using a foun-  
tain pen, the areas on the glass to be cov-  
ered with sections of filter gelatins are

(Continued on Page 319)

## Kaleidoscopic Filters

**A new economy technique that puts color into scenes  
where none exists and affords the cinematographer  
greater control over color and exposures.**

By RAY FERNSTROM, A.S.C.



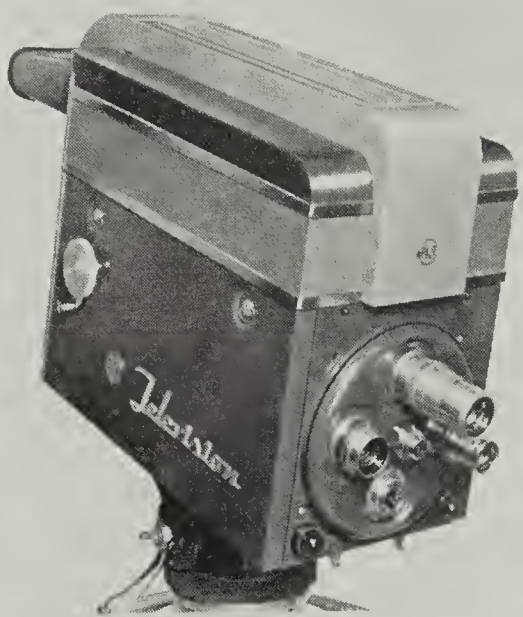


FIG. 1—Front view of the TK-10A studio camera showing the four-lens turret. Turret is rotated from rear. Lenses are focused by means of the small hand crank shown on side of camera toward the rear which adjusts the Image Orthicon tube within the camera, moving it toward or away from the lens.

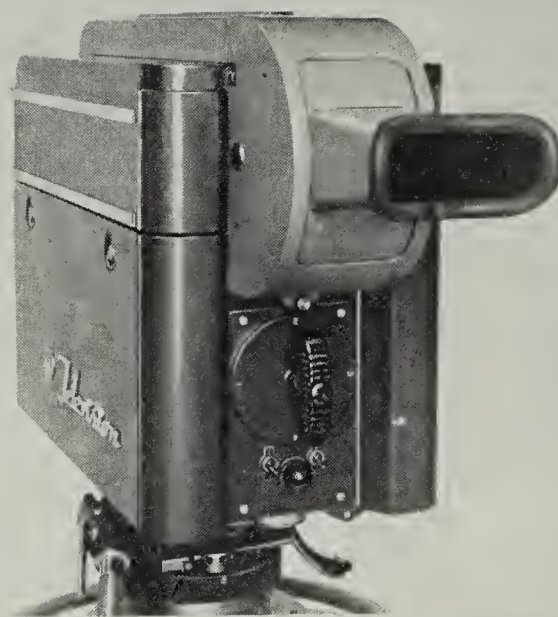


FIG. 2—Rear view of the TK-10A camera showing viewing hood of the electronic viewfinder through which operator sees the picture output of his camera. Immediately below is the handle by which operator revolves the lens turret on front of the camera.

# TELEVISION CAMERA OPERATION

**A brief discussion of television photography in studio and remote operations, using the new Image Orthicon cameras, and its comparison with cinematography.**

By HERMAS I. SMITH

*Don Lee Broadcasting System, Hollywood*

**A**CTUALLY, what is involved in operating the television camera during a telecast? What comparisons, if any, can be made to the operation of conventional motion picture camera equipment? Before discussing these questions, it might be well to describe briefly the two Image Orthicon cameras, type TK-30A and TK-10A which have recently been made available to the television industry by RCA.

Both cameras are similar in size and general design. The TK-10A is designed for studio operations and is shown in Fig. 3. The TK-30A is generally used for "remotes" or on-the-spot telecasts where conditions may be adverse. It was designed for this type of service, although it has been successfully used in studio work. One of the principle differences between the two cameras lies in the type of Image Orthicon tube employed. The type 2P23 is used in the TK-30A, and type 5655 is used in the studio camera. The differences between these tubes centers primarily in their different color response curves, and in their sensitivity to light of different levels.

To make handling and maintenance easier, the cameras are built in two basic units, the camera proper and the electronic viewfinder. The camera section contains the pickup tube and associated electronic circuits. The viewfinder contains a five-inch picture tube and associated electronic components. The cameraman, looking into the viewfinder sees on the screen of its tube the picture output of his camera. As this picture is being transmitted to the camera control unit, the cameraman may obtain accurate focus and framing as well as monitor the picture quality.

A photograph of the opened camera is shown in Fig. 5. The left hand side of the case accommodates electronic deflection and high-voltage pulse supply components. The center section contains the pick-up tube, its yoke, focus, and alignment coils with associated mechanism. The right hand side of the camera case houses video preamplifiers and associated components. The entire assembled camera and viewfinder unit is shown as normally opened for inspection in Fig. 6. All electrical connections to the camera are

made through one cable which plugs into the base of the camera at the rear. This cable terminates in the camera control unit which may be located quite a distance from the camera.

✓ The Image Orthicon pickup tubes have a semi-transparent photosensitive surface on the inside of the tube face which is located to the rear of the camera lens. This area that is sensitized to light averages 1.6 inches in diameter. Since the television picture aspect ratio is 4:3, this gives a maximum average area to be scanned of approximately .96 by 1.28 inches.

The lens turret in the front of the camera is similar to that in a motion picture camera and accommodates four lenses. These may be rapidly switched into position by turning a handle on the rear of the camera. A micro-switch which is built into this handle automatically cuts off the picture during the interval the turret is revolving. Lens changes are made while the camera is "off the air" during the period when the output of the companion camera is being used. Otherwise "on the air" the lens switch effect is not pleasing to the viewing audience.



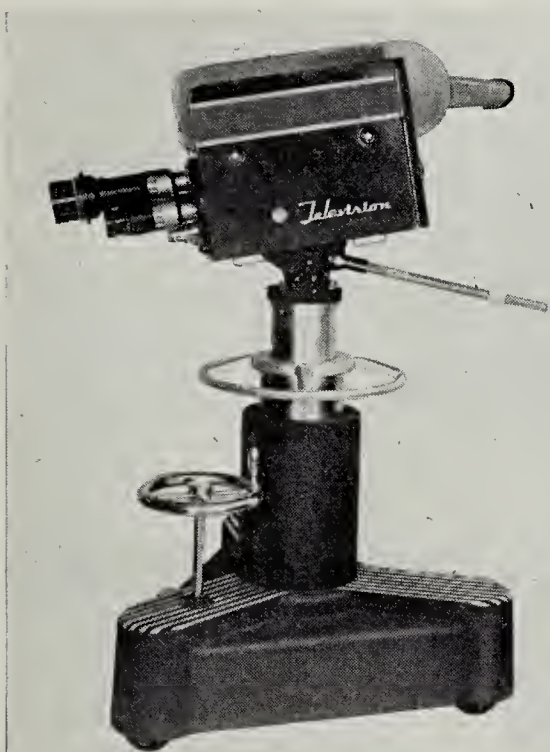


FIG. 3—TK-10A studio type television camera mounted on latest type studio pedestal.

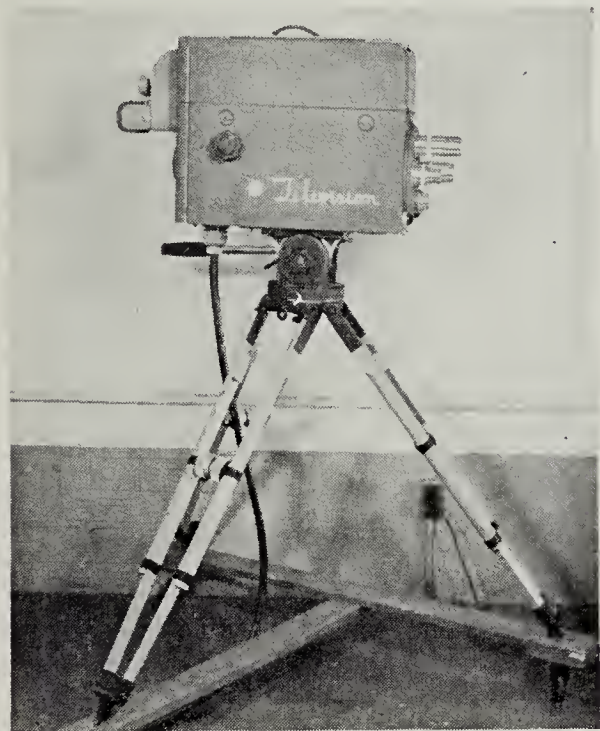


FIG. 4—The TK-30A field camera on tripod and dolly. Tripod provides easy panning as well as elevation.

The turrets of these cameras are designed to accommodate the series of Eastman Ektar lenses normally supplied for use with the Kodak Ektar camera. A wide selection of focal lengths is available which includes the Ektar 35mm, 50mm, 90mm, 135mm; also used are the RCA 8½-in., 13-in., 15-in., 17-in., and 25-in. lenses. These give the cameraman a range of horizontal lens angles ranging from 50° to about 2°, depending upon the area of the mosaic being scanned. Almost any good quality photographic objective may be adapted for use with the RCA television camera provided a satisfactory mount is designed which will fit the turret.

Focusing may be accomplished in two ways. The lenses on the turret may be individually pre-set for scenes they are intended to cover. Thereafter, the focus may be corrected through use of the main focus control on the side door of the camera, which moves the Image Orthicon tube assembly on a rack and pinion forward and backward with respect to the turret. The advantage to prefocusing the short focus lenses on their individual mounts is that changes may be made from one lens to the other without refocusing the main focus control. The long focus RCA lenses, for example, the 17-in. and 25-in., have no provision for focusing at the lens mount. With these lenses, the cameraman uses the main control knob for focusing.

Two of the most commonly used accessories in routine television camera operations are the cameraman's cue headset and talk-back, and the viewfinder hoods. The TK-10A camera is supplied with a straight-on type hood, as shown in Fig. 2, which may be corrected for a considerable range of camera tilts. The field camera TK-30A comes with two different hoods, a straight-on type and a periscope type which may be inverted depending upon

camera elevation. This type comes in handy during "remotes" where last minute changes may occur in camera placement. Both hoods are light in weight and easily interchanged. As for filter holders and lens shades, standard Kodak series VI attachments with appropriate adapter rings fit the Ektar lens series. The RCA telephoto lenses are supplied with metal telescoping hoods. A 16mm. slide film sign projector as well as numerous other accessories are available for use with these cameras.

Field, or "remote" telecasts are quite different from those originating in the studio. In the first place, the cameraman deals with unrehearsed action. Secondly, the control over many aspects of the production, including lighting, is not the same as is found in the studio. The camera positions are established on the basis of existing facilities. The cameraman may be located in a box seat at a symphony concert or atop a theatre marquee, for example. When shooting a television program subject, the program director provides the technical crew with the necessary information as to general plan for the telecast, the program sequence, and areas he wishes covered by the cameras. From there, the engineers set up the technical facilities, and the cameramen prepare the cameras for operation.

The question is often asked, "How is proper exposure determined for the camera?" Since the camera tube is scanning the image at the rate of 30 frames per second, the cameraman has this factor with which to work. It is difficult to establish any fixed rule at this time since the 2P23 pickup tubes are not all uniform in their sensitivity to light level and color, especially red. When working with high levels of illumination, the lenses can be stopped down to the approximate values

(Continued on Page 316)

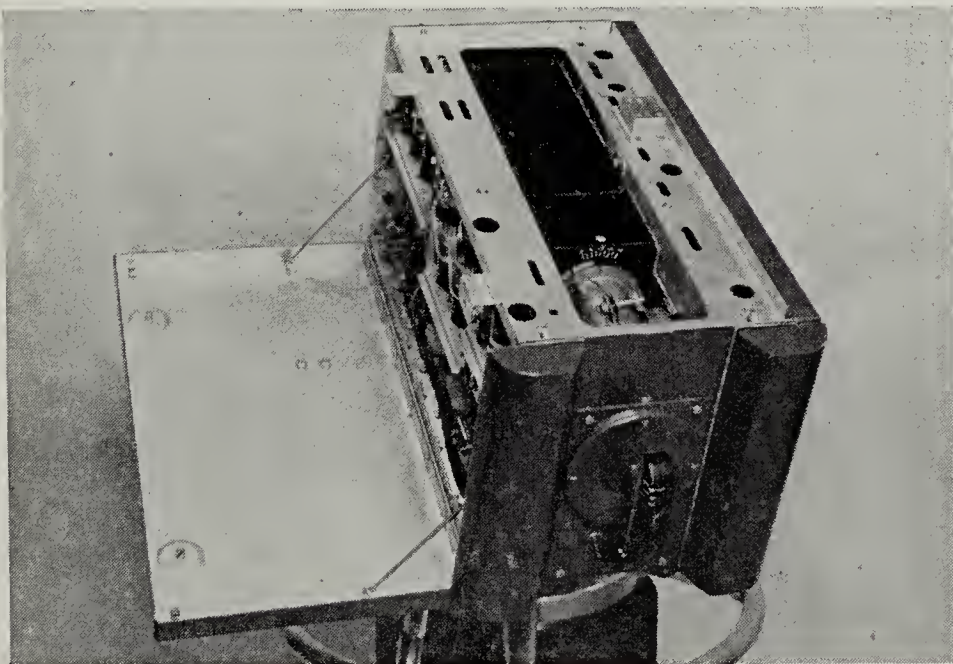


FIG. 5—The studio camera with electronic viewfinder removed and left side opened to reveal the electronic deflection and high-voltage pulse supply components. Center section contains the pickup tube, its yoke and focusing mechanism.

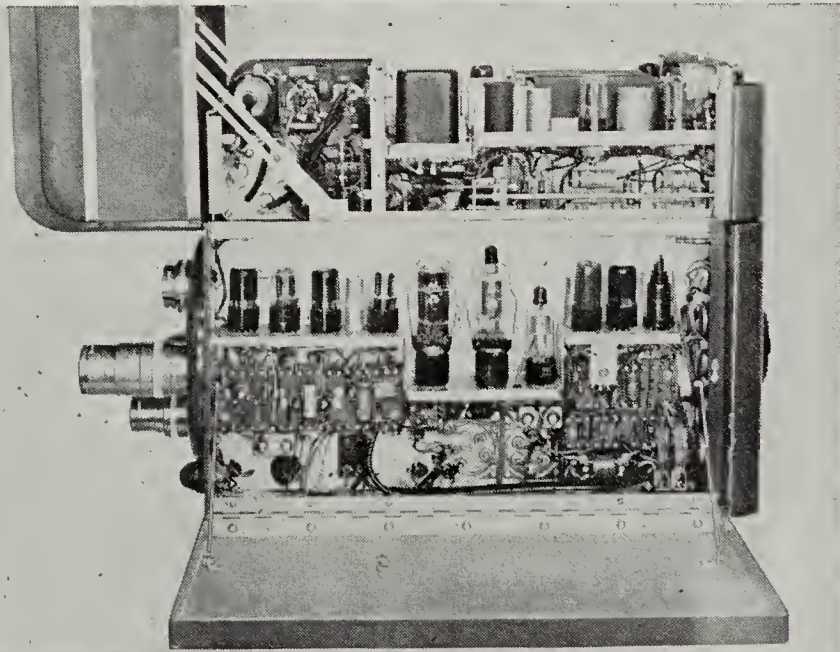


FIG. 6—Same camera viewed from left side and with viewfinder in place but with hood raised. Viewfinder is actually a miniature television receiver showing operator the exact image and image quality being picked up by camera lens.





1



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3



4



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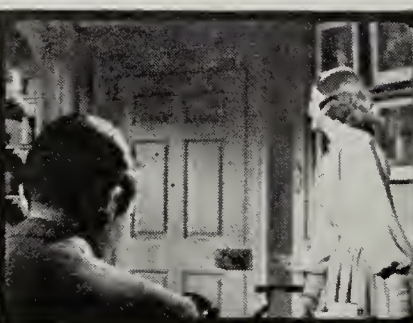
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## ROSIE'S DOLLY...

pictured on opposite page, is responsible for a new continuous long-scene technique, which makes it possible for the actors to put some real theatre into their portrayals. Frame enlargements above illustrate new technique. Note how camera moved in

and out, at same time changing angles, giving variety to the viewpoint. Scene, which screens for 3½ minutes without a single cut, features Gregory Peck and Ann Todd, stars of David O. Selznick's "Paradine Case," directed by Alfred Hitchcock and photographed by Lee Garmes, A.S.C.



# Three And A Half Minute Take...

**How dramatic continuous scene in Hitchcock's "Paradine Case" was photographed by Lee Garmes, A.S.C., using new multi-directional camera dolly.**

By BART SHERIDAN

**U**NSHACKLING the camera and giving it mobility, contends Alfred Hitchcock, is a requisite for effective screen drama if the dramatic film is to ascend new heights. Too often in the past — and even today — he believes, a good dramatic picture is hampered by too frequent cuts, not enough continuous action. And to back up his contention, Hitchcock offers the "Paradine Case" as exhibit A in which he has applied the "continuous take" idea to the "frustrated lover" sequence. The scene runs 3½ minutes on the screen without a single cut.

A condensed version of the scene is pictured in frame enlargements from the film reproduced on the opposite page. The scene was shot in this manner because Hitchcock and Director of Cinematography Lee Garmes, A.S.C., felt that its particular dramatic quality would be jeopardized by a succession of cuts; also, Selznick's head grip, Morris Rosen, had recently devised a new kind of camera dolly which would give the motion picture camera a new freedom of mobility, and this dolly offered for the first time the means of shooting a continuous take and at the same time afforded all the variety of viewpoint that ordinarily would be achieved in a succession of takes made with the camera in different setups and at different angles.

Heretofore all camera dollies have had to run on tracks, like trains, and beyond certain limits the tracks would get into the picture. Furthermore, the ordinary dolly could only move in a straight line. Rosen's dolly rests on four fully-swivel cushion-tired wheels and is noiseless in operation. It carries the camera not only in a straight line, but around corners and at an infinite number of angles. The camera handling is such that the actors can move freely back and forth across the set, as they might on the theatre stage.

The "Paradine Case" is a behind-the-scenes love drama of the English law courts. The long take sequence is enacted by Gregory Peck and Ann Todd. Peck, who plays an English barrister, has permitted his home life to be upset by a weird infatuation for Valli, a beautiful client whom he is defending on a murder charge. In this long scene Miss Todd, who appears as the wife, confronts Peck with her knowledge of the infatuation and taunts him about his self-produced mental torture.

For the players to indulge fully the dramatic scope of such a situation four prerequisites were needed: 1) enough time for Miss Todd to work up a good "mad," 2) freedom of movement for the players, 3) a chance for the audience to watch both principals uninterrupted by cuts, and 4) enough visual variety within the scene to avoid any hint of monotone.

To provide them Hitchcock and Garmes decided on the continuous-scene technique. Miss Todd opens the scene by speaking to Peck as she stands at a mantle at one side of the room. Still talking, she walks to the center of the room where Peck is sitting motionless. The camera pulls back and pans with her, then trucks forward to show a semi-closeup from a slightly different angle. They talk briefly, then she leans back on the table, rises, walks around Peck's desk and talks directly into the

camera, which has meanwhile swiveled around behind Peck. Laughing sarcastically, she pirouettes away from Peck's desk, talks again, then marches deep towards stage rear to pick up her hat and coat, the camera again trucking and panning to keep focus and perspective in order. Finally she crosses the room again in front of Peck and closes the door to leave him in solitude.

The big advantage gained artistically is the simulation of stage continuity and the chance for the players to put some "good theatre" into their presentations instead of having their words and actions strung together piecemeal in the cutting room.

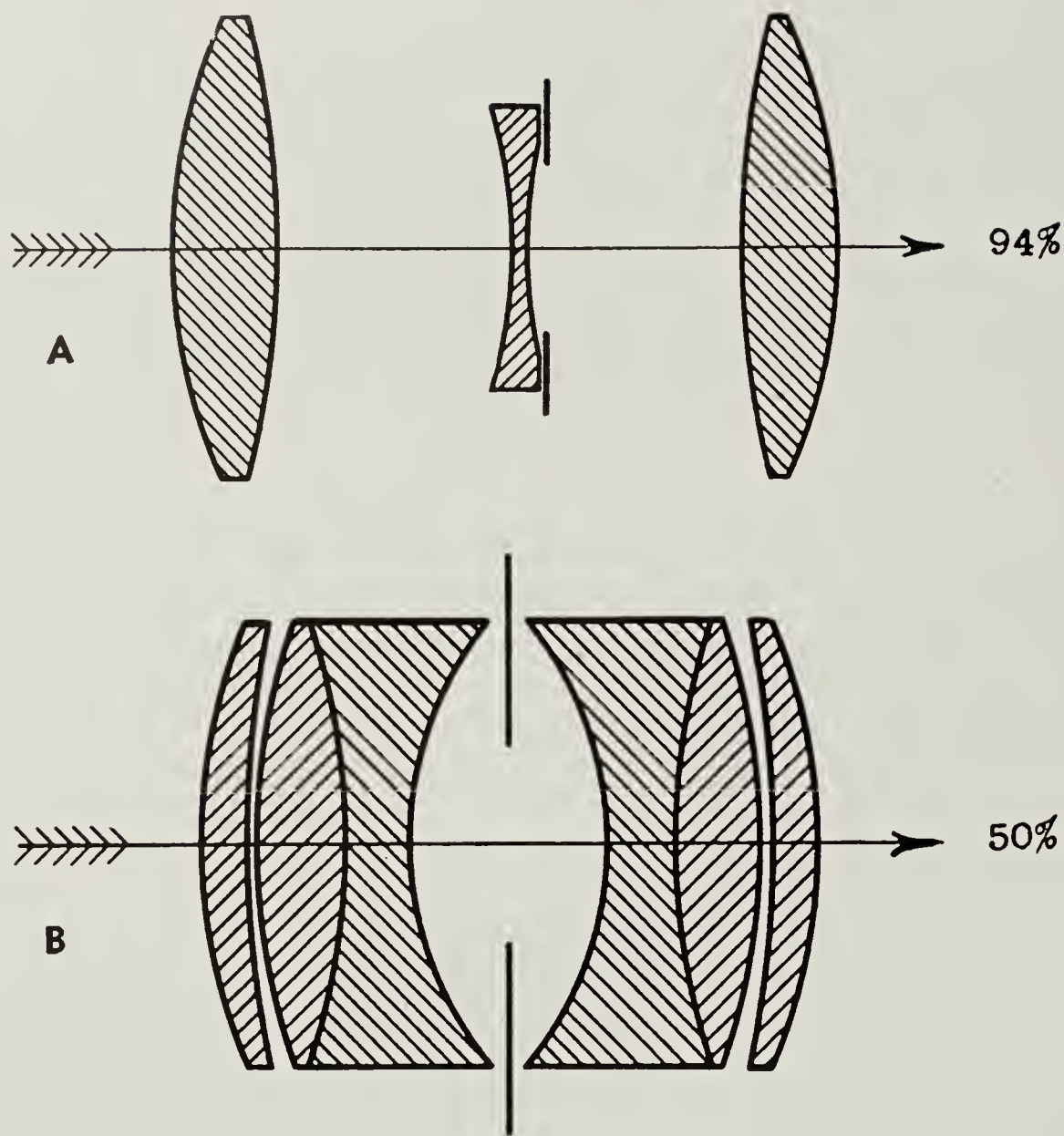
In the normal or non-Hitchcock directed motion picture, this scene would be photographed in at least 10 and possibly 15 different set-ups. The first setup would be a closeup of Miss Todd from which she would exit to camera right. The second would be a closeup of Peck and Miss Todd entering from camera left to make a two-shot. The third would be a standard two-shot

*(Continued on Page 314)*



**DUBBED "Rosie's Dolly"** in honor of its inventor, Morris Rosen, head grip for Selznick, this unique all-angle camera dolly was nominated for an Academy award, affords a method of getting dolly shots without crane, boom or tracks. Camera post may be elevated to a maximum of four feet. All four wheels pivot and enable camera to circle an actor in complete closeup coverage in a limited area.





ILLUSTRATED here is a striking example of the inadequacy of the present f/stop system, based on computations made in Bell & Howell laboratories. It was found, for example, that the 3-element, coated lens (A) will transmit 94% of the light, whereas the 6-element, uncoated lens (B), with more lens surfaces and elements, will transmit only 50%. Thus, at the same f/stop, these lenses differ from each other in light transmittance by nearly 2 to 1.

## 'T' Stops

**Present diaphragm markings on lenses are based on geometrical considerations and do not take into account losses of light resulting from absorption, reflection and scattering. New "T" system is based entirely on light transmittance of lens.**

FOR NEARLY fifty years the world's photographers have set their lenses according to f values in the erroneous belief that, because the f/stop represents an immutable mathematical ratio applicable to any lens, the f scale provides uniformity of light transmission. For half a century photographers have been taught that any lens set at a given f/stop will transmit to the film the same amount of light as any other lens set at the same f/stop, regardless of differences in focal lengths or maximum apertures.

Actually, this has never been true. It could be true only if light passing through a piece of glass were to emerge in the same intensity with which it enters. But it does not. The transmitted light is reduced in intensity by a number of factors which vary from lens to lens, and it is the ever-increasing quantity and complexity of these variables that have pushed the f scale literally out of the picture.

M. G. Townsley, in his paper presented before the S.M.P.E. convention in Chi-

cago, in April, 1947, stated that "Motion picture photography and amateur color film are placing an increasing premium on accuracy of exposure. Reflection-reducing coatings have increased the variation from lens to lens in the exposure produced by any given f/stop because the upper limit of lens transmission has been raised to approximately 95 per cent from the old maximum of perhaps 85 per cent; so that it is now possible to have nearly a two-to-one ratio between the exposures made with two lenses having the same geometrical f/stop."

Breaking with the old tradition in one sweeping move, Bell & Howell Company becomes probably the first major manufacturer of photographic equipment to adopt the long heralded "T stop" system (the "T" denotes "transmission"), having announced that its forthcoming entry into the still camera field — the new Bell & Howell "Foton" camera — will carry a lens calibrated in T stops rather than in the universally used f/stops.

Hollywood's cinematographers, too, have finally had enough of the inaccuracies of the f/stop, according to Bell & Howell Company, and are converting to the T stop standard. The company has just finished calibrating 60 lenses in T stops — ten matched sets of six lenses each — for Warner Brothers studios.

The amateur photographer may wonder how, if all this is true, we have been able to use exposure meters for all types and makes of lenses without any adjustment or compensation. In the answer lies recognition of the deficiency of the f/stop system. If the f/stop system meant absolute uniformity (100% light transmission), exposure meter scales would be calibrated on the basis of 100% transmission. But they are not. One of the most popular meters on the market calibrates its f/stop scale for a lens having 76% light transmission. It is recognized that this will be less than some lenses and more than others, but that an average is the best solution possible. The latitude of the film must take care of the actual variation.

Bell & Howell clarifies its statement condemning the f/stop system to oblivion by enumerating the factors responsible for the inaccuracies:

1. *Lens Surfaces.* Every lens surface causes light loss by reflection. The more elements in a lens, the more surfaces to lose light.
2. *Lens Elements.* When light passes through glass, a certain amount of light is lost by absorption. Thus, the more elements in a lens, the more light is absorbed.
3. *Optical Glass.* Certain types of optical glass absorb more light than other types.
4. *Coating.* Lens surfaces that are coated lose only 1% of light by reflection. Uncoated surfaces lose 4%.

(Continued on Page 318)



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## Sometimes they look as if they were pasted on!

**D**ISAPPOINTING, isn't it, the way the people in home movies often look flat and unreal—as if they had been cut out and pasted on the background.

And yet, for years now we've been telling you that Ansco Hypan film can bring you sharp, clear screen images, that look fresh, and lifelike.

See how the boy stands out above—natural looking, full of snap. That's the kind of lifelike look we mean.

We've often referred to it as the "theater" look that professionals get

in their movies. It helps put your home movies in the professional class.

Hypan film helps you get this "theater" look, with its fine grain—its pleasing scale of tone values—and its splendid panchromatic color balance.

Any dealer can tell you more about Ansco Hypan film. In both 8mm and 16mm sizes. **Ansco, Binghamton, New York.** A Division of General Aniline & Film Corporation.

**TIPS ON TITLES** —If you're taking shots in the country this fall, you might try cutting out large cardboard letters

for your lead title, and pegging them on the side of a hay stack. Paint the letters white, to show up against the hay.

— **ASK FOR** —

***Ansco***

**8 and 16mm**

**HYPAN FILM**



# LIGHTING SMALL SETS

First of a series of articles dealing with lighting as applied in modern 16mm. industrial film production.

By CHARLES LORING

THE PAST few years have seen greatly increased public interest in 16mm. industrial, documentary, advertising and sales training films. The currently booming medium of television has also created a tremendous demand for 16mm. short subjects and "commercials." As a result, many cameramen, both advanced amateur and professional, are switching their talents to 16mm. film production. In advancing from "home movies" to more complex forms of movie-making, the amateur cameraman is often uncertain as to the types of lighting to use, the



THE AVERAGE 16mm. studio set, being smaller, does not require the array of large lighting units commonly found on Hollywood sound stages. The Bardwell & McAlister Dinky-Inkie, Baby Keg-Lite and the Mole-Richardson Double Broads, Pan Light, and Baby and Junior spots are the lighting units most commonly in use in these studios.

equipment needed, and the extent to which he can adapt for his use the lighting techniques which are standard in professional film studios. With the aim of answering some of these questions, we shall attempt to analyze the overall lighting problem and perhaps provide some useful information for those just entering the fields of professional or semi-professional production.

The professional cinematographer, of course, is not unfamiliar with modern studio lighting equipment. It is possible, however, that some may not be entirely familiar with many of the smaller lighting units which have found favor with producers of films on the more limited 16mm. studio stages. These cameramen not only will find much in the way of useful data in the descriptions that follow here, but should gain much helpful information on lighting practices as applied to small sets, in subsequent articles.

The first important consideration is, of course, *equipment*. Just what kind of lighting units are to be purchased and *how many* of each will depend upon the actual needs of the cameraman, as well as upon the budget available for such equipment. These two elements may conflict, but nevertheless the cameraman should have available at least a minimum of units necessary to achieve the photographic quality the professional field demands.

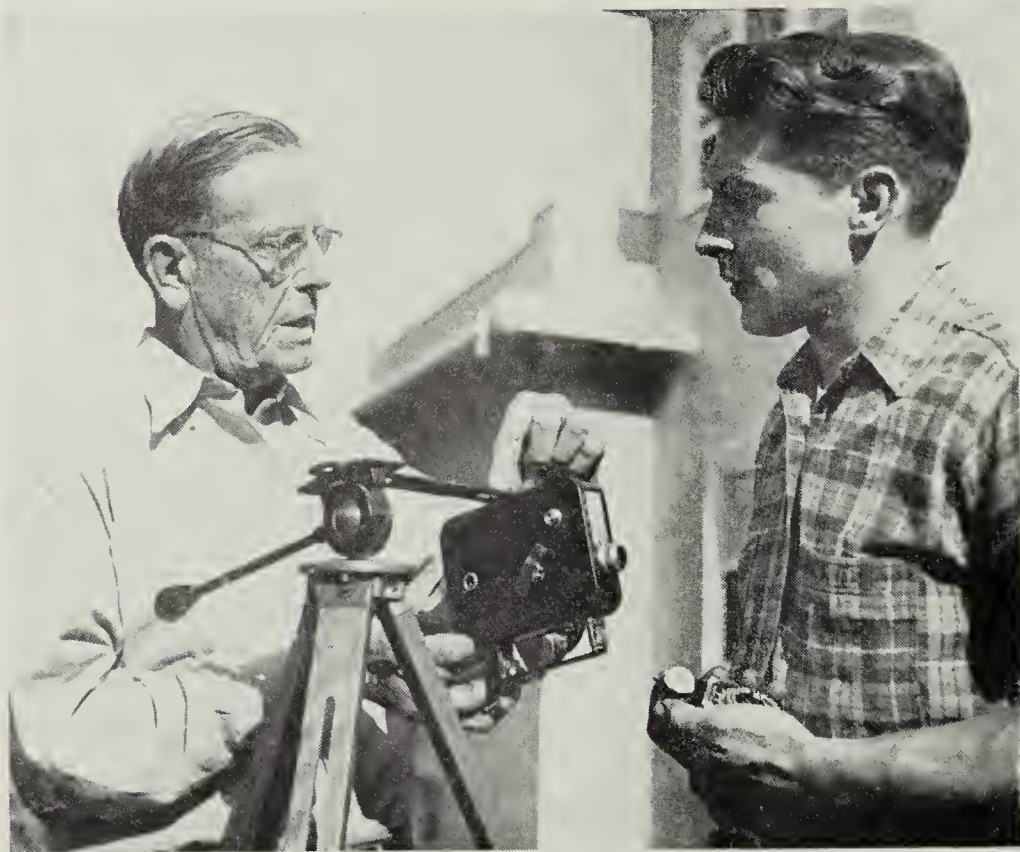
The cameraman must first analyze his own needs. Will he be shooting mostly black and white, or color? Will he have to light large sets, or will he confine his activities to filming small areas? Will most of his interiors be shot in a studio or on location? The answers to these questions will determine the kind of units he will need and how many of each. If he intends to shoot interiors in color, for example, he will need three or four times the amount of light he would require for black and white filming. If he plans to light large sets, either in the studio or on location, he will need large units capable of flooding a good-size area with general illumination. If he intends to shoot

(Continued on Page 322)



THIS SET, erected on the Raphael G. Wolff Studios' stage in Hollywood for Kelvinator's 16mm. film production, "Of This We Are Proud," is typical of the average 16mm. studio set and shows some of the smaller and widely versatile lighting units used for illumination.





FRED W. JACKMAN, A.S.C., former head of Warner Bros., special effects department, shows an 8mm. cameraist how to mount his camera for reverse action shots. A simple bracket made from a length of strap iron is secured to tripod pan head and the camera mounted upside down at the opposite end. At right is closeup of mounted camera which may be tilted or panned in the usual manner.



## Cine Magic

**Turn your camera upside down for some startling trick effects in your home movies.**

By FRED W. JACKMAN, A.S.C.

THE FOUR basic effects from which the majority of motion picture trick shots stem are reverse motion, double exposure, stop motion, and matte shots. These devices were the basis of many of the old Keystone comedy gags and of much of the spectacular trick shots which featured early day serial films. They are just as valid today for the amateur's use and are as easy to accomplish.

One sure way to break the monotony of straight photography in home movies is to work in a trick or gag shot occasionally—not too often, but just enough to cause your audience to perk up and give more than passing notice to your cinematographic skill.

No matter whether you are shooting movies around the garden, say of the family, the dog and the kiddies, or on an outing or a vacation trip, many opportunities will present themselves for giving your picture a new and interesting twist with a trick shot—providing you are familiar with trick filming routines. And

the best way in which to familiarize yourself is to study trick camera effects, then deliberately set about to shoot a few and screen them, in order that you may see for yourself how simple they are to make and how effective they are on the screen.

One of the simplest trick filming procedures is to shoot a scene or sequence with the camera held upside down. What results is "reverse motion"—the action you photograph appears on the screen in reverse. If you shoot a person walking toward you, for instance—with the camera upside down—on the screen this shot will show your subject walking backwards. Any other action in the scene—moving automobiles, a boy pedaling a bicycle, a dog trotting along the sidewalk—all will appear moving in reverse. Of course, to get the film to screen this way, it becomes necessary to cut the trick scene out of the roll of film and turn it end for end, then splice it back again, so that the scene will not appear upside down on

the screen. But then, you probably have figured this out yourself.

The example cited above is by illustration, of course. You wouldn't make a trick shot of a person walking backwards just for the trick in itself; too trite. But suppose you are shooting movies in your own backyard next Sunday with your wife and kiddies and the family dog as subjects. You probably have roll after roll of the baby crawling, toddling, walking, and of mother fondling, feeding, and strolling with her; now it's time you shot your family record films with a little continuity so they will have more appeal for others on the screen. After all, what's the use of making home movies if they aren't interesting enough to screen for your family, friends and neighbors?

So, for an interesting sequence you arrange for mother and baby daughter to give the dog a bath. The tub prepared on the lawn, mother and daughter look around for the dog. You make a close shot of him watching from a distance—over by the hedge or corner of the house. As daughter calls to the dog and starts to walk toward him, he backs away and disappears into the hedge or around the house. He knows what's up, and he doesn't want to take a bath.

Mother and daughter give chase and occasionally you pick up the dog emerging from under the house, from around the corner or from under a shrub. And as soon as mother and baby appear, he backs

*(Continued on Page 314)*





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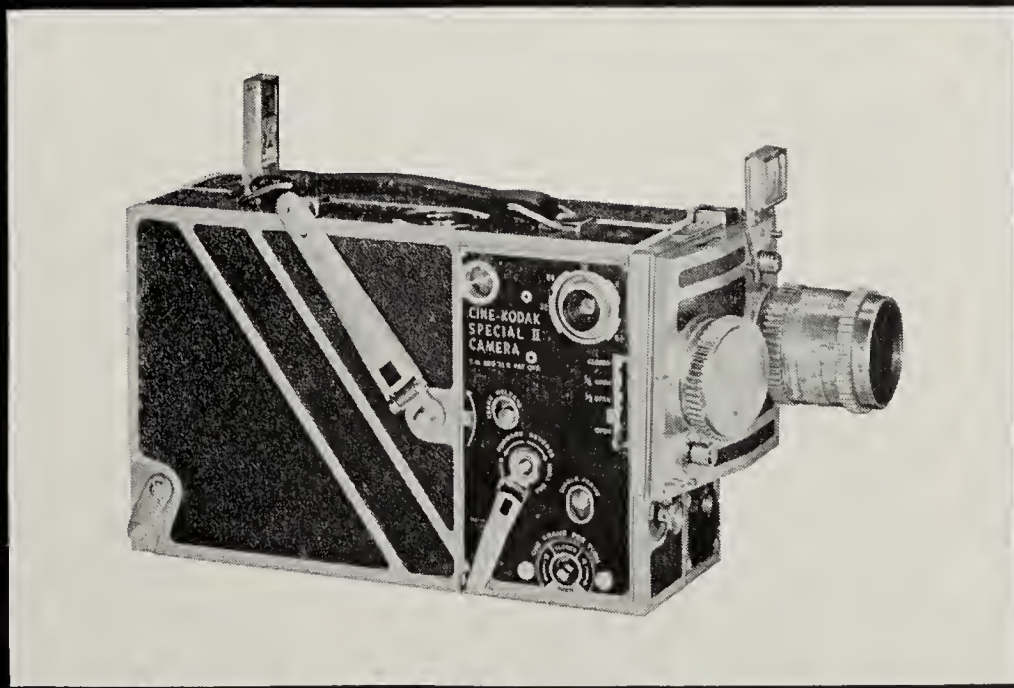
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SIDNEY ZIPSER, Technicolor Corporation technician, and the Cine Special he used in photographing "The Story of Palomar." On front of camera is special wide angle lens attachment Zipser built which enabled him to photograph interiors within the limited area of observatory dome at Mount Palomar.

## FILMING THE STORY OF THE "GIANT EYE"

**Some of the technical problems encountered in photographing, in 16mm. color, the origin, construction and installation of Palomar 200-inch lens.**

By SIDNEY ZIPSER

**"THE STORY OF PALOMAR"** was photographed in 16mm. Commercial Kodachrome with a Cine Special over a period of eighteen months and is now a finished four-reel picture with sound, which will be released and distributed by the California Institute of Technology.

The now justly famous 200-inch Hale Telescope at Palomar Mountain in Southern California is one of the great scientific and engineering achievements of all time. It is of particular interest to photographers because it is actually the largest camera ever built—a powerful instrument having a focal length of 55 feet and with a main objective having a diameter of 200 inches.

Making a documentary picture of the origin, construction and installation of this gigantic lens was a challenging opportunity and an education in itself, for astronomy has always kindled the imagination of men. The actual building of this giant telescope over a period of twenty

years at a cost of six million dollars was to me a far more dramatic and significant photographic subject than combat photography, or the photography of newsreels, travelogues and musicals with which I have worked during the past fifteen years.

Mr. Edison Hoge, who is on the scientific staff of the Mt. Wilson Observatory, and myself had discussed the possibilities of making this picture at a Caltech alumni meeting a year and a half ago. At that time the remarkable 200-inch Pyrex disk was still being polished in a specially built optical shop on the Tech campus, a "figuring" process which had already taken over ten years! This dramatic sequence would be necessary for any documentary picture, and so we started off by seeing what could be done about filming it. Only the technicians actually working on the disk were allowed inside the shop, as a minute particle of grit, if tracked in and carried to the rouge, water or mirror surface, would damage that surface enough to set the entire project back for

several years. The technicians on the project always carefully washed themselves and changed to white clothes and shoes before entering the shop, just as surgeons do in preparing for an operation. Also the machines and floors were constantly scrubbed and a specially designed "electric broom" was used to remove any metal particles that might have been tracked in or "nicked" off some of the numerous machines and other equipment inside.

Finally, we were able to complete this sequence, largely due to the careful cooperation of Marcus Brown, who was in charge of the shop, and his associates. We used brand new incandescent lamps, stands, and special cables rigged for this job. This equipment was rigidly inspected, cleansed and placed by the opticians themselves; the number and placing of the lamps being further restricted by the temperature rise on critical parts and by "kicks" in the faces of some of the men which might endanger their work. Extreme undercranking was necessary for the establishing shots photographed from the glassed-in visitor's gallery over 100 feet away and the machinery and men were slowed down as much as possible without interfering with the process. For closer shots, Hoge and I were finally admitted inside the inner sanctum after repeated warnings, careful scrubbing, and the removal of our shoes, just as would be done in a Moslem mosque. The dramatic close-ups obtained show how the finest and most painstaking optical job in history was accomplished.

Seeing the mirror being polished brought up many related questions. Why build such a big telescope? Why is a reflector used instead of a convex lens, as in the simple tubular instrument we used to see on street corners when we paid a dime to observe the Moon or Saturn? How are telescopes designed, built and operated? What is seen and photographed through them? How does this observation and research affect the average man?

If a documentary picture could answer these questions in addition to being a photographic record of an amazing scientific and engineering achievement, it ought to be of considerable interest to laymen and students and a fair distribution might be expected. Thus, I reasoned, the considerable time and expense involved in the making of it would be justified.

So one week-end, through Mr. Hoge's arrangements, we started working at the Mt. Wilson Observatory with a rough script. There was a conventional six-inch telescope similar in principle to Galileo's, which afforded an introductory sequence. Then the 100-inch reflector there, the largest existing telescope at that time, was used to demonstrate (with the aid of

*(Continued on Page 320)*



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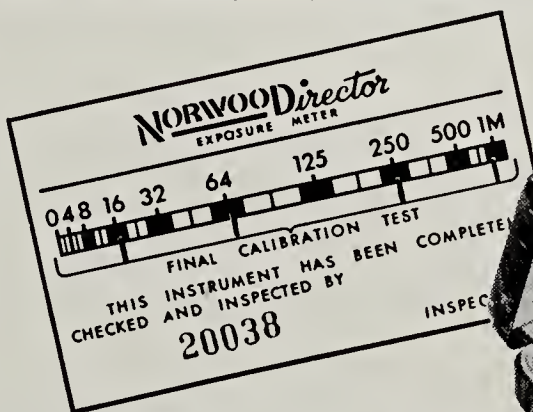
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**A FADING GLASS** may be made by smoking a rectangular panel of thin glass. Hold the glass over a smoking candle flame and coat the glass with smoke soot, graduating the application from clear to full opaque.

**PROTECT** your projector and editing equipment with jackets made of pliofilm. Material is available in yardage and may easily be stitched on a sewing machine. Plioilm covers for food mixers make excellent covers for home movie projectors, photo enlargers.

**INSURE SAFE RETURN** of your movie film from the processing laboratory, by printing your name and address on the carton as soon as you purchase film. Film mailed in haste, is often mailed with owner's name and address omitted.

**TINTING** titles photographed on black and white positive film makes them more appropriate for use with color film. Use regular photo tints, available in camera stores, or use Skript writing ink, Diamond Dyes or Rit. Soak individual title film strips in water, to soften the emulsion, then immerse in tray containing the dye solution. Sponge well and wash in clear water, then hang up to dry.

**EFFECTIVE TRANSITIONS** between two scenes can be made by having one of your subjects walk right up to the camera to black out the scene; then begin the next scene by having the same player walk away from the camera until the new scene is fully revealed.

**WHERE PROJECTOR NOISE** interferes with sound played by records with your movies, soundproof it with a blimp made of an ordinary corrugated carton. Cut hole in carton to allow passage of light from lens, also an opening at top to allow exhaust of heat from lamphouse. Place blimp over projector after starting the motor.

**AN EXCELLENT EMERGENCY** projection screen can be made by mounting an ordinary bed sheet over a curtain stretcher. Iron the wrinkles and creases out first.

**FADES IN TITLES CAN** be made by simply dimming the illumination. Connect a rheostat or a Dim-A-Lite switch to the current supply leading to your lamps to raise and lower the lamp voltage.

## THREE AND A HALF MINUTE TAKE

(Continued from Page 305)

from a straight-on angle. The fourth would be another closeup of Miss Todd as she exits to camera left. The fifth would be a closeup shot of her, the camera panning as she circled the table.

The sixth would be a shot of her over Peck's shoulder; seventh and eighth would be closeups of Peck, shot over Miss Todd's shoulder to complement setups five and six. The ninth would be another pan shot of Miss Todd as she executed her pirouette and exited to camera left. The tenth would be a close-up of Peck reacting to the pirouette, from Miss Todd's angle. The eleventh would be a pan shot of Miss Todd walking towards the sofa. The twelfth would be a close-up of her reaching for her hat and coat and exiting camera right. The fourteenth and fifteenth would be closeups or pans of Miss Todd as she exists from the room.

With 15 strips of film to work into the scene, the cutter would have inserted 20 to 30 cuts (because each cut may of course be used two or three times in the same scene) by the time the finished prints reached the screen. This would mean that the audience would watch the screen flick to a different subject or angle some 20 to 30 times, instead of none at all as in this Hitchcock scene. Of course

Hitchcock did shoot a closeup each of Peck and Miss Todd as protection in case of a hidden flaw in some frame of the big scene; but at the most this would mean a single cut over the bad section of original film.

Morris "Rosie" Rosen's dolly, of course, must be given due credit for making the scene possible and Rosen credited with devising one of the most important cinematographic aids in recent years. Made without blueprints at a cost of \$1,700 and nominated for an Academy award, the dolly comprises three basic elements: small square platform, camera post, and wheels. It will travel through any normal double door. The camera post, which is elevated and retracted mechanically, may be raised to a maximum height of four feet from floor of dolly. All four wheels, mounted on swivel bases, can make a full 360 degree turn. They are connected with one another and with the steering column by a roller chain so that all four turn simultaneously and in the same direction.

Its evolution and the effective demonstration of it by Hitchcock and Garmes sets another precedent in motion picture photography which is bound to exert a salutary influence in the planning and photography of dramatic motion pictures of the future. ★ ★ ★

## CINE MAGIC

(Continued from Page 310)

out of sight. But he backs up once too often—this time right into daughter's hands, who hurries him off to the tub.

Shots of the dog backing away would be almost impossible to film unless the dog were a trained one. So you turn your camera upside down and shoot as the dog moves forward—from around the corner of the house, from under the shrub, from the hedge, etc., as someone calls to him. And when this scene is cut from the roll of film, shortened to the right length, then re-spliced—you will have just the action called for.

While you've got the family assembled, here's another trick shot you can make: Mother cautions baby she must not eat the banana in the fruit dish on the table. But baby, left alone, disobeys and is caught in the act with the banana half eaten. Make a shot of mother as she discovers the child, then cut to a brief closeup as she expresses chagrin over child's disobedience, then cut to child—this time with camera held upside down. Now shoot while the child peels and eats half of a fresh banana. When you cut this shot out and reverse it, then splice

it back again, the child will appear on the screen—not eating the banana—but disgorging it and the banana becoming whole again, even to the skin folding back in place! And baby, caught in the act, undoes her misdeed and replaces the banana in the dish.

Many ambitious amateurs undertake the making of safety education films, often to aid civic safety drives, sometimes for a local school, and not infrequently as a business venture. Invariably the script calls for a shot showing a lad on a bicycle being run down by an automobile. Making this shot appear realistic has not always been easy for some. To film an actual accident would be almost impossible and, of course, too dangerous to risk. The right effect, however, can easily be accomplished by shooting the action in reverse.

With the camera mounted upside down on the tripod, aided by a suitable bracket, the action takes place in *reverse*. It must be carefully staged. The lad is sprawled over his bicycle in front of the stopped car, but in such a position that he can easily rise and bring his bike erect on



cue. The cue called, he goes through this motion and backs away toward the curb. At the same time, the automobile backs away.

When this scene is cut out and reversed in the film, the auto will appear to meet and strike down the boy as he rides carelessly in front of the oncoming car. Skillful cutting aided by one or two cover up closeups of the terrified motorist ostensibly braking to a stop, or of his locked wheels skidding, complete the illusion.

The knife throwing gag was always good for a thrill sequence in early day silent films and indeed is occasionally used today in comedies. It's so easy to do that you'll want to try it next time you have a dart game going in the patio or playroom. Instead of using knives, use darts as the medium of your subject's skill or villainy.

The trick is accomplished by *pulling* the darts out of the target, one by one, as your supposedly terrified subject watches them whizz by his head, while your camera, mounted upside down, records the action. Tie stout threads to the darts, long enough to reach beyond camera position. Then have your subject take place in front of dart board. Stick darts into board on either side of his head. If background is predominantly

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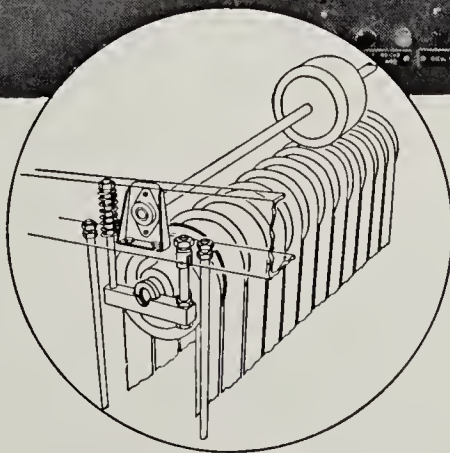
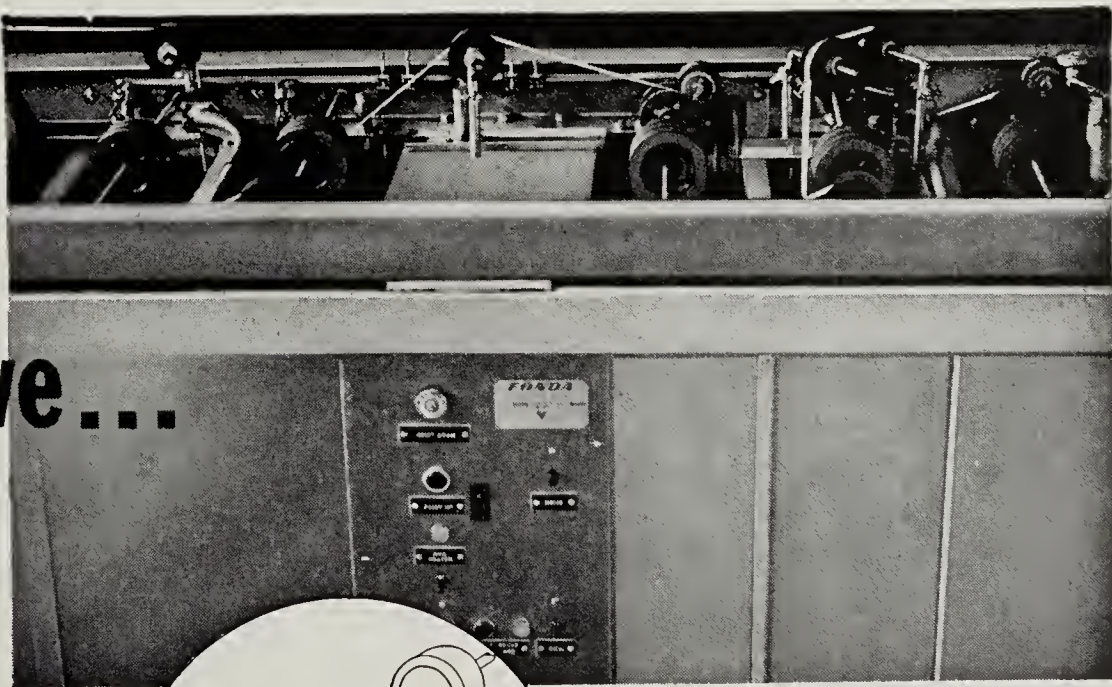
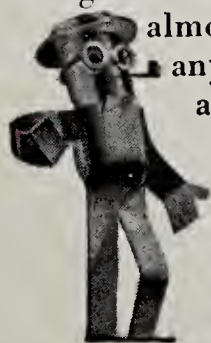
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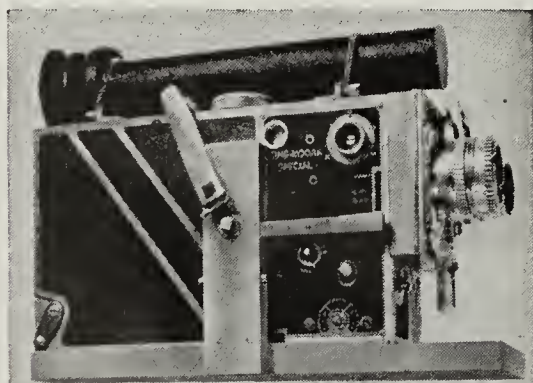
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dark, tie black threads to darts; and if light, use white thread so that threads will not register in the picture and thereby spoil the illusion.

On cue, as your camera starts to turn, your subject registers fright and watches the darts at either side. An assistant, working outside camera range, pulls the darts out one by one by jerking sharply on the threads. Shoot some of the dart action in tight closeups to lend variety to the sequence. When the scene is cut out and reversed in the film, the darts will appear to enter the scene with a flash and imbed themselves in the board close to your subject's head. More realism will be lent the scene if you cut frequently to closeups of the dart thrower just as he releases a dart.

Other illusions possible with the upside down camera are: a diver springing up from a pool to the diving board; a man jumping to top of a high wall or shed; a kitten backing away from a strange new pet; a man effortlessly gathering a load of kindling—the pieces jumping magically into his arms; making a board grow in length by sawing off small sections, etc.

And if you take your vacation by rail this year, you can make an effective scenic shot of the countryside as viewed from front of the locomotive, but without mounting your camera on the cowcatcher to do it. Simply shoot from the rear platform of the train as it moves, holding your camera upsidedown. When the scene is cut out, turned end for end, and re-spliced into your film, it will have all the illusion of having been shot from front of the locomotive.

In keeping with the frequent admonition to "always use your tripod" when shooting movies, you can mount your camera on your tripod in inverted position by providing a simple accessory consisting of a 12" length of 1/4-inch strap iron. Drill quarter-inch holes about a half inch in from either end to take the conventional tripod screw. Mount this bar on tripod, using a 1/4-inch No. 20 thumb nut. Mount your camera upside down at the other end, using a regular tripod socket screw which you can buy at any camera store.

Making reverse action shots is slightly more difficult for the 8mm. filmer than for the 16 because 8mm. film, having only a single row of sprocket holes, not only must be turned end for end, but also turned over to bring the sprocket holes in line with rest of the film. Thus the emulsion side of the film strip joins with the glossy or base side of the two film sections to which it is to be spliced. Sometimes this results in slight out of focus on the screen, but this can be corrected by quick adjustment of the lens as projection progresses.

Any deviation, any improvement in your filming, naturally takes a little more pains. But it's worth it as you will invariably discover from the reaction of your friends when they see your pictures on the screen. Keep in mind one thing, however: don't inject a trick shot into your picture just to display your ingenuity. Use it logically—make it a part of the continuity—and the whole effect will appear more professional.

In a future issue we shall describe the application of other professional trick effects to 8mm. and 16mm. movies.

## TELEVISION CAMERA OPERATION

(Continued from Page 303)

that would be used with movie cameras using very fast panchromatic film at 24 frames per second. In the final determination of satisfactory lens settings for a given scene, the cameraman and video engineer can carefully check the electrical response of the camera itself.

The video engineer has before him at the camera control a continuous oscilloscope picture that shows the electrical output of the camera. The optimum lens settings can be worked out on the basis of this information. Lens settings should be uniform regardless of the small differences noted on the F-setting scales of each lens so that no appreciable variation in the output of the camera is evidenced as the lenses are switched.

At the last Santa Claus Lane parade in Hollywood, it was possible to make comparisons between the TK-30A field camera and standard newsreel motion picture

cameras. In operation, the cameras were located side-by-side on the newsreel platform. Essentially uniform lighting was provided for the general area which allowed the newsreel men to work at an exposure of F1.5 at 24 frames for fast panchromatic film. The TK-30A had no lenses on the turret that were faster than F3.5, but good picture quality was obtained with the 17-in. F5 telephoto which was used for extreme close-ups of celebrities who were riding on the floats. The newsreel cameramen who inspected the TK-30A were quick to note the brightness and clarity of the picture in the electronic viewfinder. At very low light levels, as the motion picture cameraman knows, an optical viewfinder is not always satisfactory. Here the tele cameraman has an advantage in that he can easily adjust the contrast and brightness of his viewfinder picture to suit his requirements.



A discussion of lighting for television could become lengthy. In general, lights, and lighting setups suitable for motion picture work are also satisfactory for television when the Image Orthicon camera is used. However, it is important that the spectral characteristics of the light source closely approximate the response curve of the pickup tube if maximum efficiency is to be realized. The type 2P23 tube has great sensitivity to light in the red end of the spectrum. The type 5655 studio tube has good sensitivity to the blue. Both tubes have good response to the visible spectrum, the exact response curve being a characteristic of the individual tube.

Of the two types, the 2P23 tube, according to the manufacturer, is approximately 10 times more sensitive. For studio work, light levels from 50 to 300-foot candles should be sufficient for high quality work. The 2P23 has yielded a good studio picture with key lighting of about 5 - 10 foot candles. The definition of the picture decreases considerably at very low light levels. There are other factors that also enter into the problem which concern the electronic aspect of the picture.

Much improvement has been made in picture pickup tubes since the time when two- to five-thousand foot candles of illumination were required for television studio shows. Those who work on the television stages today appreciate the great reduction of heat that has been made possible with the use of less lighting facilities.

There is quite a contrast between the operation of a motion picture camera and a television camera. Except in very rare cases, the average take with a motion picture camera ranges from a few seconds to one or two minutes. With the television camera—shooting studio shows or remotes—the cameraman is alert and operating the camera every second during the program interval, which may be as long as two or three hours.

Watching the viewfinder picture intently, he must follow the action and anticipate cues to cover his fellow cameraman when a picture cut is ordered by the program director in the control room. His double headphones carry the director's instructions to one ear and the program sound to the other. Whenever the red signal light flashes "off" in his viewfinder, he knows his camera is momentarily off the air and this usually accompanies instructions to switch lenses or get ready to take a new scene.

Rotating the handle at the rear of the camera, he quickly brings the right lens before the camera tube then corrects it for focus and framing. He must also check in an instant the content and composition of the picture for, in a second or two he may be back on the air. A success-

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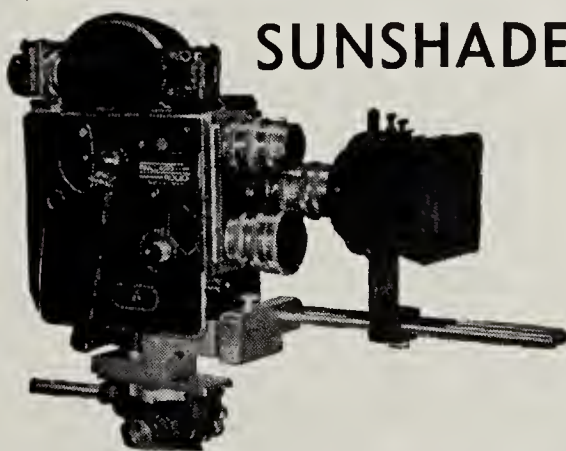
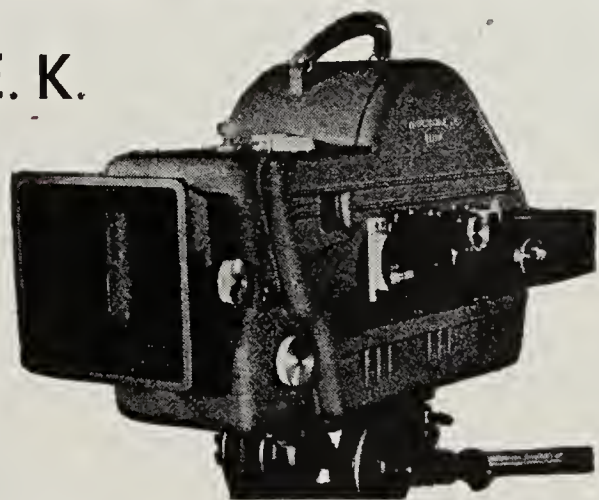
## GEAR DRIVE

The head, made of Dow Metal, weighs but 5½ lbs. and is interchangeable with the Friction type head. It handles all types of cameras. Snap-on metal cranks control pan and tilt action from both sides. Worm-driven gears are Gov't spec. bronze.



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### BACK ISSUES

of The American Cinematographer are available for most months of 1947 and 1948. Many earlier issues also available. All contain valuable technical articles and information relative to contemporary motion picture photography. The December issues contain an annual index as a guide to content of each year's 12 issues. Price of back issues: In U. S., 30c; Foreign, 40c.

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ful show depends upon smooth teamwork between the two or more cameramen and the technical crew. During the show, a cameraman must always keep in mind his obligation to his teammate to

"keep him covered" in emergencies. In television, the photography must be right the first time. There can be no retakes and there are no labs to correct for errors.

## 'T' STOPS

(Continued from Page 306)

5. *Manufacturers' Tolerances.* Even in like lenses, permissible tolerances cause variations in focal lengths, in aperture sizes, etc.

In the early days of photography, B&H states further, the relatively simple construction of all lenses did not disturb the so-called uniformity of the f/stop system. However, the science of photography has made rapid strides through the years, and today's lenses are faster, more complex, and composed of more elements, than could have been remotely imagined when the f/stop system was standardized in 1900.

In a striking example of the inadequacy of the old system, B&H quotes actual computations showing that a 3-element, coated lens will transmit 94% of the light, whereas a 6-element, uncoated lens will transmit only 50%. Thus, at the same f/stop, these lenses differ from each other in light passage by nearly two to one!

The T system, B&H claims, will change all this because the T stops represent honest measurement of the light actually transmitted by the lens at the various settings. In the f/stop system, each f value is mathematically figured from the physical dimensions of the lens, with no thought given to glass, surfaces, or any of the other variable factors. In the new T stop system, light is passed through the lens to a photo-electric cell, where it is actually measured. Thus the T value represents the true light-admitting ability of the lens, and since the light on every T stop on every lens is actually measured electronically, true uniformity is finally achieved. T 2 or T 8 on any lens will admit the same amount of light as T 2 or T 8, respectively, on any other lens, regardless of differ-

ences in focal lengths or maximum apertures.

Bell & Howell is careful to answer in advance one of the first questions put forth by amateur photographers who have no reason to determine the mathematics of lens calibration. Comparison of the two systems will reveal that for a given, physical diaphragm opening, the T stop rating will be slower than the f/stop. Obviously, the same amount of light goes through the particular lens opening at that size, no matter what name is given to the size. The f/stop system will indicate a faster rating because the method of figuring it does not allow for any light loss whatsoever. The T stop rating will be slightly slower because it does take light loss into account and represents true value. The change is simply a change in naming the various diaphragm sizes, and not a change to smaller, slower, apertures. Thus a given lens opening might be rated both f/1.9 and T 2, the f value indicating lens speed that does not exist, and the T rating telling the unvarnished truth for the first time.

Bell & Howell states that its optical engineers have played leading roles in industry-wide consultations on T stop adoption, and that as a result, a committee of the American Standards Association is now preparing a report adopting the T system as an American Standard.

No longer, says Bell & Howell, will newsreel cameramen, for instance, be obliged to calibrate privately their favorite sets of lenses for variations in exposure. And when exposure meter manufacturers can base their scales on 100% light transmission, instead of on an arbitrary average, true readings for exposure will be possible.

Because the T stop is determined by photo-cell-measured light, and because the light from a given photographic subject is also measured by a photo-cell (within the exposure meter), unerring lens adjustments will be possible. With lens calibrations and light from the subject both measured with electronic accuracy, every photo-cell meter actually will be matched to every T stop lens.

All this naturally poses a problem for many readers of how to reconcile exposure meter readings with the new lens calibrations. For the exacting photographer Townsley states that exposure correction may be easily taken into account by using a simple multiplying factor to correct the

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film speed value to be used. For the Weston exposure meter, for example, the factor has been established at 1/0.76, since the value of 0.76 was introduced into the exposure meter equation as a correction factor for lens losses.

Bell & Howell's engineers state it even more simply. They say that in view of fact most all popular exposure meters are calibrated to account for lens loss, simply advance your Weston speed rating one point. Thus, if you are shooting Kodachrome, which has a Weston rating of 8, you would set it up on your exposure meter as 10 when taking readings for use with lenses calibrated in T stops.

## KALEIDOSCOPIIC FILTERS

(Continued from Page 301)

outlined with ink, and when the entire composition is so charted, the various areas are subject to an application of colored gelatins or of transparent color or both, whichever is required to produce the desired effect.

The application is illustrated in the accompanying diagrams of an actual scene I recently photographed. The larger shows a typical coastal scene in which a nearly white sky and high water reflection prevail and, in addition, the terrain in the foreground is a brownish, almost colorless tone instead of the green desired in the planned pictorial composition.

In order to put color into the scene where none exists, the panel of glass is diagrammed as shown in the illustration at the left. Subsequently a rectangular pola screen is applied over the entire glass. This takes care of the water and other undesirable reflections. Then a clear-to-blue filter gel is applied over the sky area to lend a natural sky tone instead of the existing washed out white or "Santa Monica" sky so familiar to Hollywood cinematographers. The sea area, of course, was not modified beyond that imparted by the pola screen. The lower third of the picture area was treated with a carefully cut section of green filter gelatine. Before this was applied, a square was cut out leaving clear that area of the scene in which live action was to take place. After the green filter was applied, then green paint was sprayed over the comparatively small area in the scene not corrected by the filter, the paint being carefully matched with the tone of the green filter.

Lighting contrast control is also possible by this method of cell-onto-glass by applying N.D. gelatine of the proper density. In one scene of the production cited here, my entire picture composition was shaded except for the center area of the middle background where the main action was to take place. My meter indicated a 3-stop difference between the two areas—far beyond the latitude of the film I was work-

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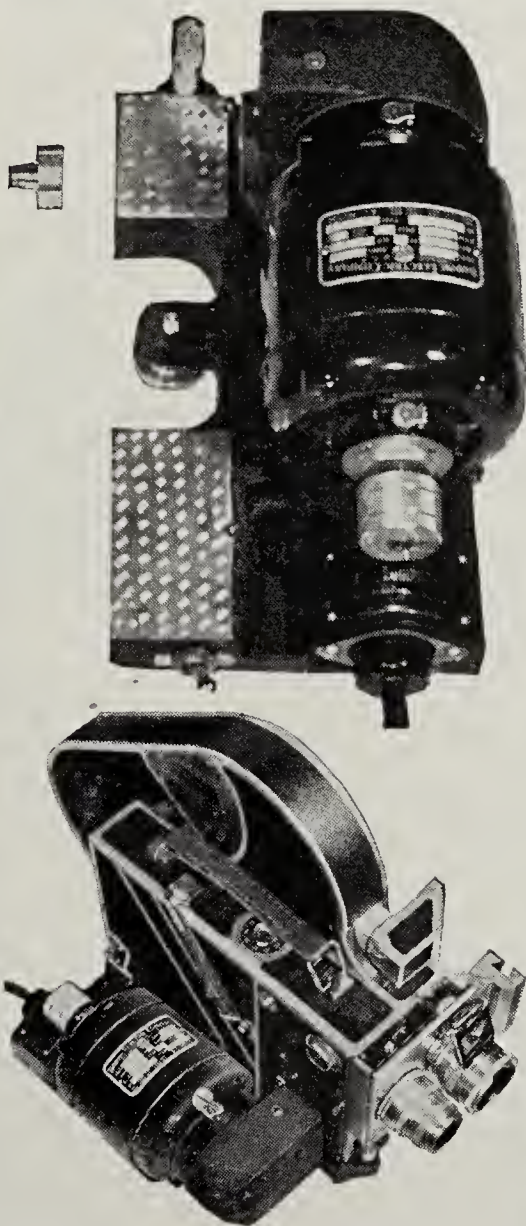
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## 25 YEARS AGO

### With A.S.C. and Members

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• JACKSON ROSE, Steve Norton, George Meehan, and L. Guy Wilky in the July, 1923 issue of *THE AMERICAN CINEMATOGRAPHER*, discussed the uses and abuses of gauze in cinematography. "Gauze," said Rose, "is properly and more effectively used with the lens at maximum opening."

• JOHN ARNOLD started shooting initial scenes for "In Search of a Thrill," starring Viola Dana, for Metro.

• JOHN SEITZ and Victor Milner completed filming Rex Ingraham's production of "Sacramouche" for Metro.

• SAM LANDERS was assigned to do the camerawork on Associated First National's production of "Thundergate," directed by Joseph de Grasse.

• TONY GAUDIO, at the request of Norma Talmadge, was assigned to photograph "Rose of All the World."

• FAXON DEAN was shooting the first Paramount Pictures production starring Douglas Fairbanks, Jr., and directed by Joseph Henabery.

• ARTHUR EDESON was photographing Douglas Fairbanks, Sr.'s, production of "The Thief Of Bagdad."

• DAVID ABEL was preparing to shoot "Lucretia Lombard," a Warner Brothers production, having wound up the camera work on "The Gold Diggers" for the same studio.

• ROLLIE TOTHEROH was doing the camera work on Charlie Chaplin's production, "Woman of Paris," starring Edna Purviance.

• NORBERT L. BRODIN was selected by Frank Lloyd to be his chief cinematographer on his new productions for First National.

• CHARLES ROSHER was filming "Tiger Rose" for Warner Brothers and had Ernest Palmer and Reginald Lyons on second unit camera for location scenes.

• SOL POLITO was putting the final cinematic touches on Edwin Carewe's production of "The Bad Man" for First National.

• VICTOR MILNER revealed in a special article in *The American Cinematographer* that in 1912 he had taught Calvin Coolidge to operate a motion picture camera. Coolidge later took the camera north with him and made movies during a moose hunt. Coolidge was now President of the United States.

• ROBERT NEWHARD was awaiting the world premiere of "The Hunchback of Notre Dame" which he had photographed for Universal.

ing with. The situation was corrected by applying a piece of N.D. filter gelatin over the bright area on the glass panel on the matte box which made possible a balanced over-all exposure for the scene.

The method I follow in judging filter densities employs an incident light meter, converted to read reflected light. Holding the filter in front of the meter cell, and reading the scene through the filter gives an approximate figure which is correlated with characteristics of the color film used on the production.

Where panning or tilting is required, the filters-on-glass procedure undergoes slight change. Instead of mounting the glass in front of the matte box, a larger glass panel is used and mounted on supports some distance ahead of the camera, as in making a glass shot. The method of outlining the areas to be filtered is the same as for the smaller glass panel, as is that for application of the filter gels. The area between the filter glass and the camera, of course, must be blocked out to form a virtual giant matte box. This may be done using a black cloth and battens.

Still another use for colored filter gelatins is in conjunction with reflectors used on exteriors. While shooting location scenes for "Last of the Redmen," I wanted the Indians to appear more like shining copperskins. By spraying them with oil and using gold foil reflectors the effect achieved was excellent. When there were not enough gold foil reflectors to cover the area, we simply applied large sheets of amber colored filter gelatin over silver reflectors and used them to augment the gold reflectors with good results.

Graduated color filters are available on special order from Harrison & Harrison and it was the cooperation of this company which enabled me to switch from experimenting with clear paints on glass to gelatins in making my kaleidoscopic filters. The Mole-Richardson company also have gelatin sheets available in a wide variety of colors. To apply the gelatins to glass requires only wetting one surface and smoothing them on. To secure them in place for an extended interval of time, it is advisable to apply another panel of glass over the gels, forming a sandwich.

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## FILMING STORY OF "MAGIC EYE"

*(Continued from Page 312)*

animated diagrams) how a reflector works, how large telescopes are used mostly as cameras, and what is seen and photographed through them, and the advantages and need of a still larger instrument. Incidentally, the 100-inch telescope, painted flat black against a black background, presented some technical problems in color photography. The lighting was not only limited by the black subject and a seventy-foot spread for the long shot, but also by the objection to any lighting equipment which would appreciably raise the temperature inside the dome, as previously mentioned. And the shutters couldn't be opened to admit daylight for the same reason, for the warm air would expand some of the critical parts a few millionths of an inch and thus distort the image of that night's scheduled observation.

Still another problem was the confining dome of the observatory which required use of a super wide-angle lens in order to photograph action within the dome. I also saw that such a lens would be required in shooting scenes within the optical shop at Palomar and for making several other interior shots. I designed and built a triple reducing lens for my Cine Special which photographs a much wider angle than the conventional 25mm. lens used on 35mm. motion picture cameras in the studios. This reducing lens assembly is shown in the accompanying photograph, flanked at the sides and the top by a large sunshade. The square hous-

ing encases three plano-convex lenses—one 2-inch, one 3-inch, and one 6-inch. The lenses were obtained from various optical shops. Putting the lens together and testing it consumed the better part of two weeks.

During the shooting, Hoge and myself were aided materially by the astronomers, engineers and opticians, all of whom appreciated what we were trying to accomplish. Their cooperation permitted a natural presentation of men actually at work without resorting to actors, reenactments or posed shots against fake backgrounds. Then their suggestions and criticisms made the picture absolutely authentic, too. After the final narrative script was written, I found it weighted with too many technical terms, so I rewrote the narrative in simple understandable language which was again double-checked for accuracy.

Production of the 200-inch lens was covered completely. Not having been on hand with a camera when glass for the lens was first poured at the Corning Glass works years earlier, nor when subsequent operations in the forming of the giant disk were undertaken, I bridged these events, in order to retain complete continuity, by copying stills showing pouring of the glass. These and other stills were photographed by having 8x10 transparencies made of them, then photographing them by means of light projected from the rear. Here critical exposure meter readings were necessary



as well as several test runs, in order to insure the photographic result desired.

Following this sequence were live action sequences depicting the Cal-Tech campus, the astro-physics building, and the optical and instrument shops there. Picturing drawings and scale models of the 200-inch telescope built up an understanding of the instrument and made possible a clearer understanding of the problems involved in its construction. In order to convey the extreme accuracy necessary in the grinding and polishing of the giant lens element, I included a brief sequence which shows how small, two-inch lenses were originally ground by hand, and how larger lenses and mirrors require increasingly larger and more complex machines and tools.

The Foucault test climaxes the polishing of the 200-inch mirror. When, after eleven and one-half years, the final accuracy of the concave surface is measured by the reflection of a tiny beam of light, actual shots were made of this process in which a pattern of light and shadow indicates variations in the surface of only two-millionths of an inch. Imagine using a flashlight bulb to photography an area seventeen feet wide, and in color!

The loading and moving of the mirror in its cell, 35 tons of steel and glass, was one of the most amazing feats of heavy but delicate transportation ever recorded. A 58-wheeled trailer pulled and pushed by three powerful tractors was escorted by the California Highway Patrol over cleared and in some cases specially built roads and reinforced bridges to Palomar Mountain. This sequence added considerable suspense and scenic interest to the picture, and involved some "jack-rabbit" operations on my part in order to catch the dramatic transportation highlights with my camera. The route travelled by the trucks was cleared well in advance of the truck and heavily guarded. Thus, despite my connection with filming the project for Cal-Tech, I frequently encountered difficulty in getting my car on the highway again after making a shot in order to speed ahead for the next camera setup. But by poring over maps and planning many shortcuts in advance, I managed to make the appointed camera positions in ample time to get set up and ready for the trucks when they arrived on the scene.

Looking through a large telescope reveals millions of stars that can't be seen with the naked eye. These visible stars can be photographed in about five minutes with a still camera. Obviously, a longer time exposure reveals more stars, billions more in fact, stars which can never be seen except on negatives exposed continuously, hours at a time, sometimes for several successive nights. As the earth rotates, the telescope must be moved con-

(Continued on Next Page)

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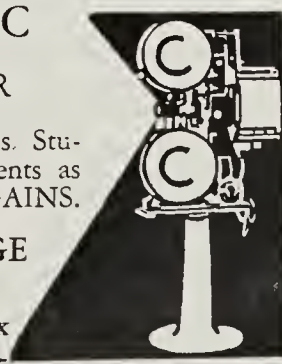
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# Current Assignments of A. S. C. Members

Members of The American Society of Cinematographers were engaged as Directors of Photography in the Hollywood Studios during the month of August, as follows:

## Columbia

- BURNETT GUFFEY, "Knock On Any Door," (Santana Prod.) with Humphrey Bogart and Susan Perry. Nicholas Ray, director.
- LESTER WHITE, "Jungle Jim," with Johnny Weismuller and Virginia Grey. William Berke, director.
- JOSEPH WALKER, "Mr. Soft Touch," with Glenn Ford and Evelyn Keyes. Gordon Douglas, director.
- PHIL TANNURA, "The Lone Wolf and His Lady," with Ron Randell, June Vincent and Alan Mowbray. John Hoffman, director.
- VINCENT FARRAR, "The Crime Doctor's Diary," with Warner Baxter, Lois Maxwell and Adele Jergens. Seymour Friedman, director.

## Eagle-Lion

- WILLIAM H. GREENE, "The Big Cat," (Technicolor) with Lon McCallister and Peggy Ann Garner. Phil Karlson, director.
- JOHN ALTON, "Red Stallion of the Rockies," (Cinecolor) with Jean Heather and Arthur Franz. Ralph Murphy, director.

## Independent

- WINTON HOCH, "Tulsa," (Walter Wanger Prod.) (Technicolor) with Susan Hayward and Robert Preston. Stuart Heisler, director.
- ERNEST LASZLO, "The Lucky Stiff," (American Enterprises-UA) with Dorothy Lamour, Brian Donlevy and Claire Trevor. Lew Foster, director.
- LEE GARMES, "The Best Things In Life Are Free," (Enterprise) with Barbara Bel Geddes, Robert Ryan, James Mason. John Berry, director.
- WILLIAM C. MELLOR, "Blonde Heaven," (Lester Cowan-UA) with the Marx Brothers and Ilona Massey. David Miller, director.
- GILBERT WARRENTON, "Parole," (Orbit-E. L.) with Michael O'Shea, Turhan Bey, and Evelyn Ankers. Alfred Zeisler, director.
- WALTER STRENGE, "A Date With Murder," (Falcon Prod.) with John Calvert and Catharine Craig. Jack Bernard, director.
- FRED H. JACKMAN, JR., "Canadian Pacific," (Nat Holt-20th) (Cinecolor) with Randolph Scott and Jane Wyatt. Edwin L. Marin, director.
- LUCIEN ANDRIOT, "Outpost In Morocco," (Moroccan Pictures-UA) (Goldwyn) with George Raft and Marie Windsor. Robert Florey, director.
- BENJAMIN H. KLINE, "Last of the Wild Horses," (Lippert-Screen Guild) with James Ellison, Jane Frazee and Mary Beth Hughes. Robert L. Lipper, director.
- WILLIAM A. SICKNER, "Rose of Cimarron," (Alson Prod.-20th) with George Montgomery, Rod Cameron and Ruth Roman. Lesley Selander, director.
- JOHN ALTON, "Reign of Terror," (Walter Wanger-EL) with Robert Cummings and Arlene Dahl. Anthony Mann, director.

## M-G-M

- CHARLES SCHOENBAUM, "Little Women," (Technicolor) with June Allyson, Margaret O'Brien, Eliz. Taylor, Janet Leigh and Peter Lawford. Mervyn LeRoy, director.

- HARRY STRADLING, "Barkleys of Broadway," (Technicolor) with Fred Astair and Ginger Rogers. Charles Walters, director.
- GEORGE J. FOLSEY, JR., "Take Me Out To the Ball Game," (Technicolor) with Frank Sinatra, Esther Williams and Gene Kelly. Busby Berkeley, director.
- ROBERT H. PLANCK, "Little Women," (Technicolor) with June Allyson, Margaret O'Brien, Eliz. Taylor, Janet Leigh and Peter Lawford. Mervyn LeRoy, director.

## Monogram

- HARRY C. NEUMANN, "Call of the Cactus," with Jimmy Wakely and "Cannonball" Taylor. Lambert Hillyer, director.
- MARCEL LEPICARD, "Incident," with Warren Douglas and Jane Frazee. Hall Shelton, director.
- MACK STENGLER, "Joe Palooka in the Big Fight," with Joe Kirkwood, Jr., and Lina Romay. Cy Endfield, director.
- HARRY C. NEUMANN, "Gunning for Justice," with Johnny Mack Brown and Evelyn Finley. Ray Taylor, director.

## Paramount

- LEO TOVER, "The Heiress," with Olivia DeHaviland and Sir Ralph Richardson. William Wyler, director.
- RAY RENNAHAN, "Streets Of Laredo," (Technicolor) with William Holden, William Bendix and Mona Freeman. Leslie Fenton, director.
- JOHN F. SEITZ, "One Woman," with Alan Ladd, Donna Reed and June Havoc. Lewis Allen, director.

## R-K-O

- HARRY WILD, "Interference," with Victor Mature and Lucille Ball. Jacques Tourneur, director.
- J. ROY HUNT, "Gun Runners," with Tim Holt, Richard Martin and Martha Hyer. Frank McDonald, director.
- ROBERT DEGRASSE, "Follow Me Quietly," with William Lundigan and Dorothy Patrick. Richard Fleischer, director.

## 20thCentury-Fox

- ARTHUR MILLER, "Three Wives," with Jeanne Crain, Linda Darnell and Jeffrey Lynn. Joseph L. Mankiewicz, director.
- HARRY A. JACKSON, "Chicken Every Sunday," with Dan Dailey, Alan Young and Celeste Holm. George Seaton, director.
- CHARLES G. CLARKE, "Sand," (Technicolor) with Mark Stevens, Coleen Gray and Rory Calhoun. Lou King, director.
- JOSEPH LASHALLE, "The Fan," with Jeanne Crain and George Sanders. Otto Preminger, director.
- ARTHUR ARLING, "Mother Is a Freshman," (Technicolor) with Loretta Young and Van Johnson. Lloyd Bacon, director.
- JOE MACDONALD, "Down to the Sea in Ships," with Richard Widmark, Cecil Kellway and Dean Stockwell. Henry Hathaway, director.

## Warner Brothers

- ROBERT BURKS, "The Fountainhead," with

Gary Cooper and Patricia Neal. King Vidor, director.

- WILLIAM E. SNYDER, "The House Across the Street," with Wayne Morris and Janis Paige. Richard Bare, director.
- CARL GUTHRIE, "Somewhere in the City," with Viveca Lindfors and Edmond O'Brien. Vincent Sherman, director.
- ERNEST HALLER, "Happy Times," (Technicolor) with Danny Kaye and Barbara Bates. Henry Koster, director.
- WILFRID CLINE, "Two Guys and a Gal," (Technicolor) with Dennis Morgan, Jack Carson and Doris Day. David Butler, director.
- KARL FREUND, "Montana," (Technicolor) with Errol Flynn and Alexis Smith. Ray Enright, director.

## 'GIANT EYE'

(Continued from Page 321)

tinuously during the exposure with unbelievable accuracy, to hold the image of the stars.

Limitations on film speed and static views make motion pictures through a telescope meaningless generally, but again still transparencies were copied for this picture to show the beauties, the mysteries, and the measurable data of our vast universe. To trained observers, the 200-inch telescope will present the greatest and most unknown frontier that the mind of man has ever explored. We must remember that steam and electricity and atoms were once impractical laboratory curiosities. No man can foresee what modern astro-physics may bring forth in this scientific age. The stars have already revealed new elements, sources of atomic energy, and confirmation of the sweeping theories of Copernicus and Einstein. And there is that age old satisfaction men have always had in looking with wonder at the heavens. feeling our destiny is somehow locked in their dim and distant secrets.

## LIGHTING SMALL SETS

(Continued from Page 309)

on location most of the time, he will want lighting units that fold up for easy portability, but which are sturdy enough to be hauled about and simple enough to be set up quickly in a new location.

The matter of budget is bound to rear its ugly head unless the cameraman is fortunate enough to have unlimited funds to spend on equipment. Top-grade lighting units are fairly expensive and would represent quite an investment for the cameraman or producer who shoots few interior sequences. In such cases, it is better to rent lighting units than to tie up a large sum of money in purchased equipment. But if the cameraman knows that he will be shooting interior sequences frequently, it is wiser by far to invest in substantial lighting units. If his funds are limited, he will do well to invest in a



few good basic units (which may be bought used) and fill in with photofloods or improvised reflector set-ups.

Let's take a look at the types of small set lighting units available and compare the characteristics of each, starting with the simplest units and working up to the more elaborate pieces:

**Photofloods**—These are high-intensity incandescent bulbs available in three sizes (250 watts, 500 watts, and 1,000 watts). The two smaller bulbs, numbers 1 and 2, have standard bases and will fit any household screw-socket. The larger bulb, number 4, has a larger mogul type base and must be used in a special socket. The average burning life of these bulbs is about six hours, and they are most effective when used in metal reflectors. Photofloods are very useful when mounted in banks for high-intensity general illumination. In professional cinematography they are often used to boost the general light level, especially in color photography where higher levels of illumination are required.

**Reflector Spots and Floods**—These are "mushroom" shaped units with reflectors built into the bulbs. Their chief advantage is that they are complete in themselves and need no additional reflectors. The floods can be used very successfully in banks for general illumination. The spots give out a concentrated, softly diffused beam that serves as a good modeling light in black and white cinematography.

**The Dinky-Inkie**—This is the smallest standard spotlight unit used in motion picture photography, and it is a real boon to any cameraman. Carrying a bulb of 100 to 150 watts, it is extremely versatile and portable. Its small size enables it to be easily concealed behind furniture or props on the set. It has a beam that can be focused from 4 to 44 degrees, and a complete line of accessories is available for use in controlling the light.

**The Baby Keg-light**—A widely used 500-750 watt spotlight that is valuable as a light-weight all-purpose unit. It is a basic unit in black and white filming, and valuable as a secondary unit in color cinematography. The Foco-spot attachment that fits onto this unit permits a wide variety of unusual effects.

**The Junior Spotlight**—A 1,000-2,000 watt unit is an excellent basic light for the cinematographer. Equipped with a 2,000 watt bulb, it also serves well as a key-light for black and white cinematography and can be similarly used in color photography when a wider aperture is used. The Junior Spot combines adequate illumination with easy portability, and is equipped with a sturdy stand that folds up into a small space. A complete line of accessories affords the ultimate in light control.

**The Senior Spotlight**—A 5,000 watt unit that is invaluable to the professional

cinematographer. It is sufficiently bright to simulate outdoor sunlight on an interior set, as well as to cover large areas with general illumination. As a key-light in color filming it is unexcelled, since it allows the cameraman to stop down his lens aperture for greater depth-of-field. It is a light bright enough to dominate the key of a set-up without getting lost in the superimposed light of other units that may be used for general illumination. For this reason, it is especially useful in creating a modeled effect in color filming. The Senior Spot is, however, an expensive unit, both from the standpoint of cost and the amount of current used. The newly-turned professional cameraman will do well to make sure of his needs before investing in this unit:

**Single and Double Broads**—These units accommodate 500 or 750 watt globes in a lamphouse featuring a highly diffused lens. The singles have one bulb, while the doubles carry two. The quality of light is extremely soft, ideal for filling the shadow side of a face in close-up. The Broads are also useful in casting an even tone of light on backgrounds, as well as for softening harsh shadows cast by the key-light. Broads are especially adapted to black and white cinematography because they are relatively weak in intensity, but the double broad is often used in color close-ups as a fill light for producing translucent shadows.

**The Cinelite**—A recently developed general-purpose unit consisting of a metal stand topped with a parabolic reflector into which is fitted a No. 4 photoflood globe. This unit was especially designed as a portable general-illumination source for color photography, and it fills the bill perfectly. On large sets, several of these units can be mounted on an overhead pipe to flood the stage area.

The above standard lighting units are generally available from any studio lighting dealer. For the spotlights described accessories are available such as barn doors, snoots, diffusers and daylight filters (for use when mixing daylight with artificial light in color filming.)

In addition to the lighting units themselves, suitable electrical wiring facilities must be obtained. For location shooting, the main piece of equipment will be a master switch box with a heavy cable that can be tapped into city lines or existing current on the scene. Plugging into this box will be two or three other cables each terminating in a switch box capable of accommodating up to six lighting units. For semi-permanent set-ups, such as a building converted to a shooting stage, a main "hot-line" can be brought in and installed in a metal conduit. Standard stage boxes can be attached to this line, and the units fitted with stage plugs.

The amount of current needed will depend upon the number of units to be used and the amperage they will draw.

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Roughly speaking, one ampere of current will be required for each 100 watts of illumination. The standard house circuit is wired to accept only 10 to 15 amps. Overloading such circuits, even when heavier fuses are installed, may result in burned-out wiring and an actual fire hazard. So, if you are planning to use a number of heavy lighting units, be sure that your electrical facilities are strong enough to accommodate the current required.

How many units to buy depends, as we have said before, upon the types of filming done. The minimum basic requirements for professional lighting quality, however, should include one Junior Spotlight, 3 Baby Keg-lites, 2 Dinky-Inkies, and one single or double Broad, or their equivalent. If filming is to be done in color, at least six Cinelites should be purchased in addition to the other units. A Senior Spotlight is a very valuable unit to have on any sort of large scale production. Banks of reflectors made with sockets mounted in a row on a wooden base are good general illumination sources for use on location.

It is wise for the producer or cameraman just going into professional production to analyze his own needs, purchase the minimum number of lighting units, and gradually add any additional units which time and experience indicate a need. If his funds are limited, he may purchase a very few professional lighting units and supplement them with home-made reflector and strip-light units using photoflood lamps as a light source.

NEXT MONTH: Part II—Basic Set Lighting.

## BULLETIN BOARD

(Continued from Page 296)

Seely, Montana, fifty miles northwest of Missoula. The property, to be developed as one of America's finest dude ranches, has four lakes and five streams heavily stocked with trout, two ski runs and a private landing field equipped to handle standard airliners as well as private planes. Recently Ralph Staub, A.S.C., journeyed there with Glenn Ford, Eleanor Powell, Sonny Tufts and Charlie Ruggles to produce one of his "Screen Snapshots" short subjects. Life magazine's photographers will cover a grizzly bear hunt there in October.

**CORRECTION:** In Fred Gately's article describing the Spectra meter last month, the 6th line in second paragraph on page 280 should have read, "... degrees or 3200 degrees Kelvin, and either the light itself..." In the 23rd line, 1st paragraph, 2nd column, same page, the word *separation* should have been *situation*. Our proofreader's apologies to Fred Gately and our readers.

# WHAT'S NEW

## in equipment, accessories, service



FIFTY-SEVEN brand new "16mm. Professional" Mitchell cameras, part of large Navy contract order.

### Mitchell Anniversary

This month, Mitchell Camera Company, Glendale, Calif., celebrates the first anniversary of the introduction of its "16mm. Professional" motion picture camera by delivering the first group of cameras—57 in all—on its contract with the U. S. Navy. Cameras, pictured above, will be distributed among the Navy's various motion picture units.

Designed to meet the need for really professional equipment in the Navy's expanding training film production activities, these cameras will soon be manned by carefully trained Naval cinematographers in a program of research and training film production.

The Mitchell "16mm. Professional," which is virtually identical to the famed Mitchell 35mm. studio camera, incorporates the same proven features of its studio counterpart. Every type of photographic effect possible with a 35mm. camera is also possible with the Mitchell "16mm. Professional."

### 50th Anniversary

September 13th marks the 50th anniversary of the day in 1898 when Fred Schmid, a young instrument-maker, applied for a position with the Goerz Optical Works in Berlin-Friedenau, Germany. After an interview with C. P. Goerz, founder of the Goerz enterprises, latter offered to send him to America to open a branch factory there.

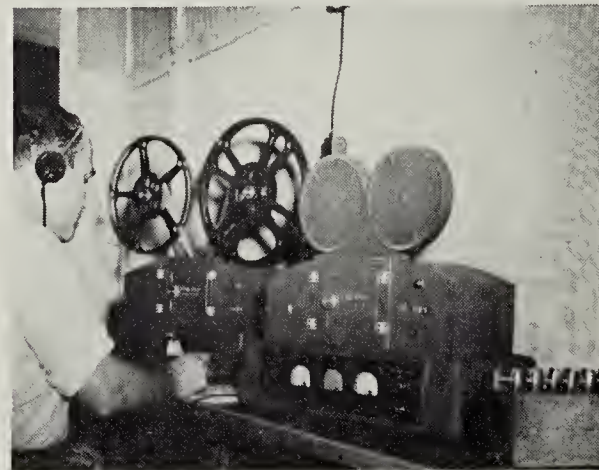
The American firm was incorporated in 1906 as the C. P. Goerz American Optical Company. The German Goerz Company was merged in 1926 with the Zeiss Ikon Corporation in Germany. Today the American Goerz firm is the only company which supplies a full line of the celebrated Goerz photo-lenses. Fred Schmid, at first in charge of production, was made general manager in 1910,

vice president of the American company in 1920, and finally president in 1937.

### 16mm. Tape Recorder

Combining a typical motion picture engineered high fidelity synchronous 16mm. recorder with a 16mm. high fidelity magnetic tape recorder, the Cine-Pro Corp., 106 West End Ave., New York City, offers a versatile magnetic recording device that affords the 16mm. film producer the means for recording sound for his films at a considerable saving over photoelectric recording.

The tape, which has standard 16mm. film perforations, travels at a speed of 14.4 inches per second or twice ordinary 16mm. film recording speed, which in-



CINE-PRO magnetic tape recorder uses perforated 16mm. film, is synchronous motor driven.

sure a frequency response beyond 13,000 cycles. A combination forward-reverse switch affords quick rewinding of the recorded tape. A footage counter indicates the return of tape to exact starting point. Large reel arms permit use of tape in 1600 foot spools to provide a maximum of 22 minutes of continuous recording. As with all magnetic recording mediums, the tape may be erased and re-used hundreds of times.

The synchronous motor drive of recorder affords use of recorder for lip-sync sound recording with any camera driven by a synchronous motor. Fidelity of track produced by the Cine-Pro magnetic tape recorder is said to exceed that of the finest 35mm. photoelectric recorded sound track due to extremely low background noise inherent in magnetic recording.

### S.O.S. In New Quarters

S.O.S. Cinema Supply Corp., New York, celebrated its 22nd anniversary recently by moving into its wholly-owned and completely new quarters at 602 West



52nd St. Founded 22 years ago by J. A. Tanney, company president, organization now commands 3½ acres of floor space and a substantial and highly expert staff of camera and laboratory technicians.

When sound was first added to silent pictures, the new art required the services of skilled sound technicians, and very few trained men were available.

Tanney formed Service on Sound Corp. (hence S.O.S.) with a nucleus of ex-radio and broadcasting engineers, to give periodic and emergency service to the industry.

As the big Electrics expanded their own service departments and rental arrangements, S.O.S. swung into sales, repairs and maintenance, changing its corporate title to Sales on Sound. In a few years, with the emphasis definitely on sales, it adopted its present name S.O.S. Cinema Supply Corp.

Claiming to offer complete coverage of the entire line of equipment needed by cinematographers the company today handles every known make of cinematic, printing, processing, lighting and recording apparatus, either as new or as reconditioned equipment, or both. S.O.S. does its own reconditioning with the help of



S.O.S. Cinema Supply Corp., of New York recently moved to these new quarters.

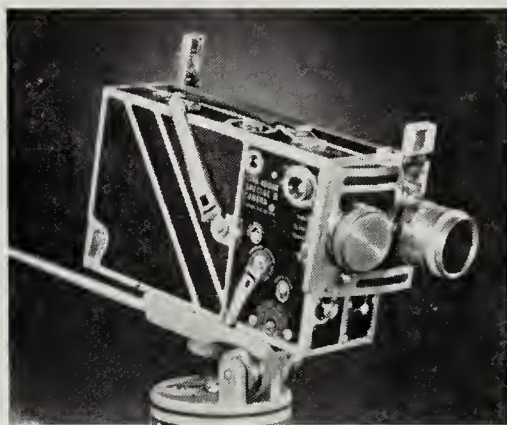
the most advanced machine tools and extremely skilled and versatile machinists.

While many patrons visit its New York headquarters, S.O.S. conducts its business largely via mail order. Because of this policy, Tanney explains, the company rarely sends out sales representatives, except on major undertakings.

### New Cine-Special

The famous Cine-Kodak Special camera now features a new type of lens turret, and improved reflex, eye-level, and peep-sight viewfinders. It also will be equipped with the new Kodak Cine Ektar 25mm. f/1.4 lens as standard.

The newly designed lens turret—most apparent outward change in the camera—is equipped with integral adapters which accept the full line of Cine-Kodak interchangeable lenses. The adapters are of ball-bearing construction and lenses, once seated, are locked securely in position. Lens block is angled to prevent second lens from interfering with the first—either physically or optically—when the first is in picture-taking position. Any two current Cine-Kodak accessory lenses—regardless of speed or focal length—can



CINE-KODAK "Special" with re-designed 2-lens rotary turret, new Cine Ektar lenses.

be used in combination and with easy interchangeability.

Changes have also been made in the eye-level finder system. A separate front-finder element is now made for each of the full line of Cine-Kodak lenses. Finders snap onto the turret.

Improvements in the peepsight are such that the sight can now be adjusted to correct for parallax at film-to-subject distances ranging from 2 feet to infinity.

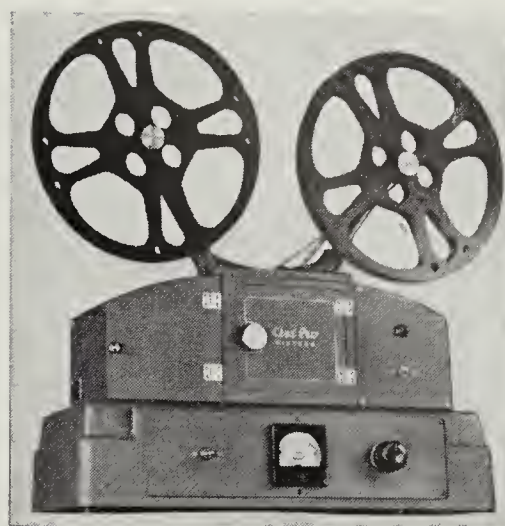
Owners of Cine-Kodak Special cameras who wish to have their cameras converted to the new model may do so through the Kodak Repair Department, it was announced.

The Cine-Kodak Special II camera is priced at \$860, plus tax.

## KEEPING UP WITH PHOTOGRAPHY

(Continued from Page 298)

minutes to remove the silver halide formed from the colloidal silver of the filter layer and from the fine-grained silver that was produced as fog in the first developer without removal of the silver halide of the sound-track of picture records. This treatment produces clean highlights for the sound track record. The sound-track is then redeveloped for about 15 to 30 seconds by edge application of a strong black-and-white developer. A final fixing for about 2 minutes completes the treatment of the film.



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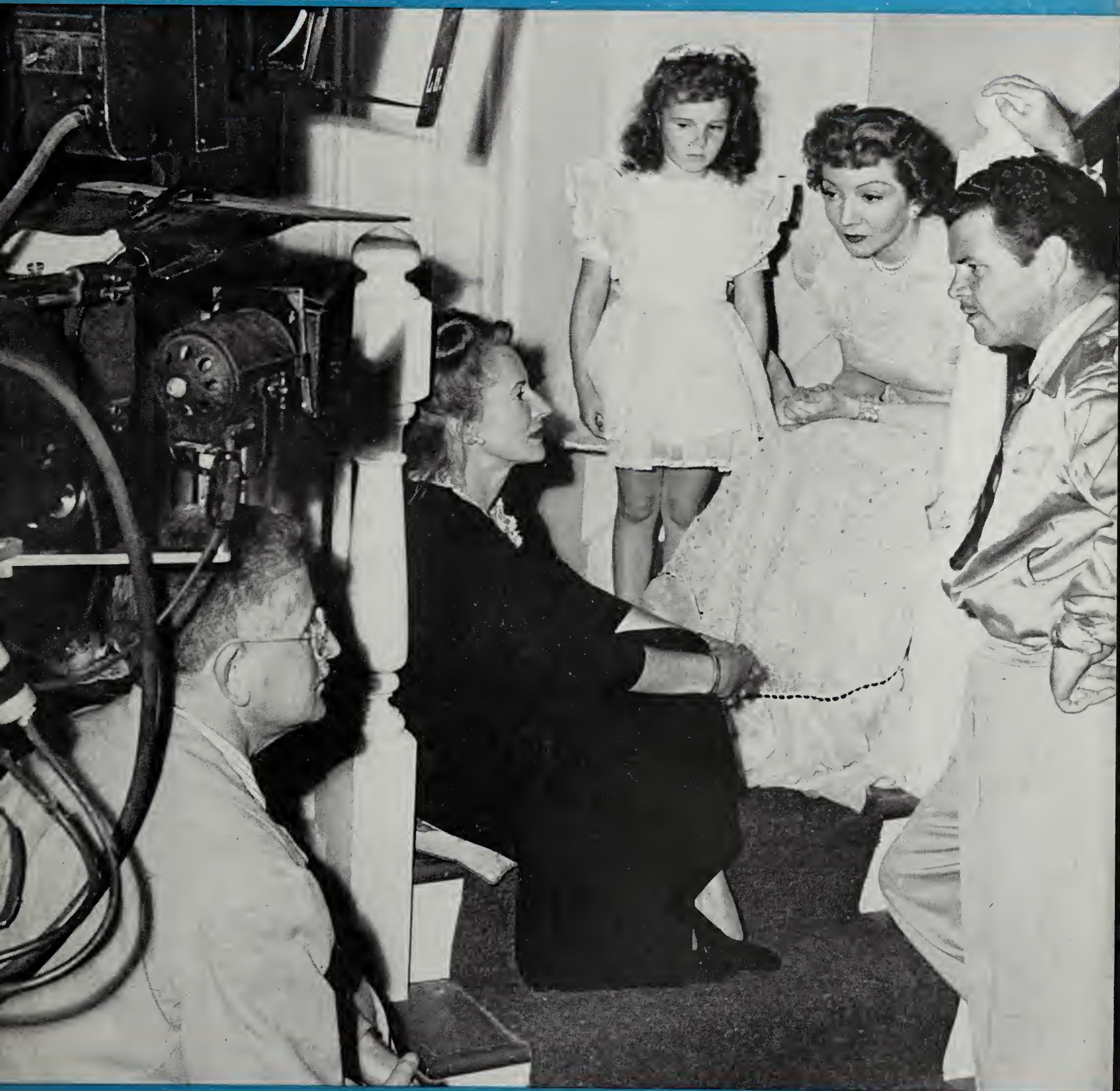
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# Cinematographer



THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY  
TWENTY-NINTH YEAR

OCTOBER  
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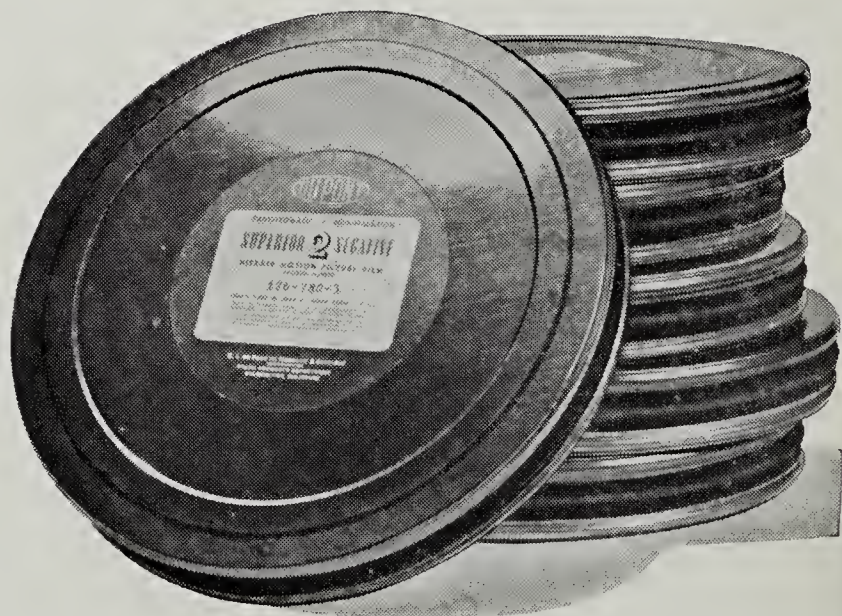


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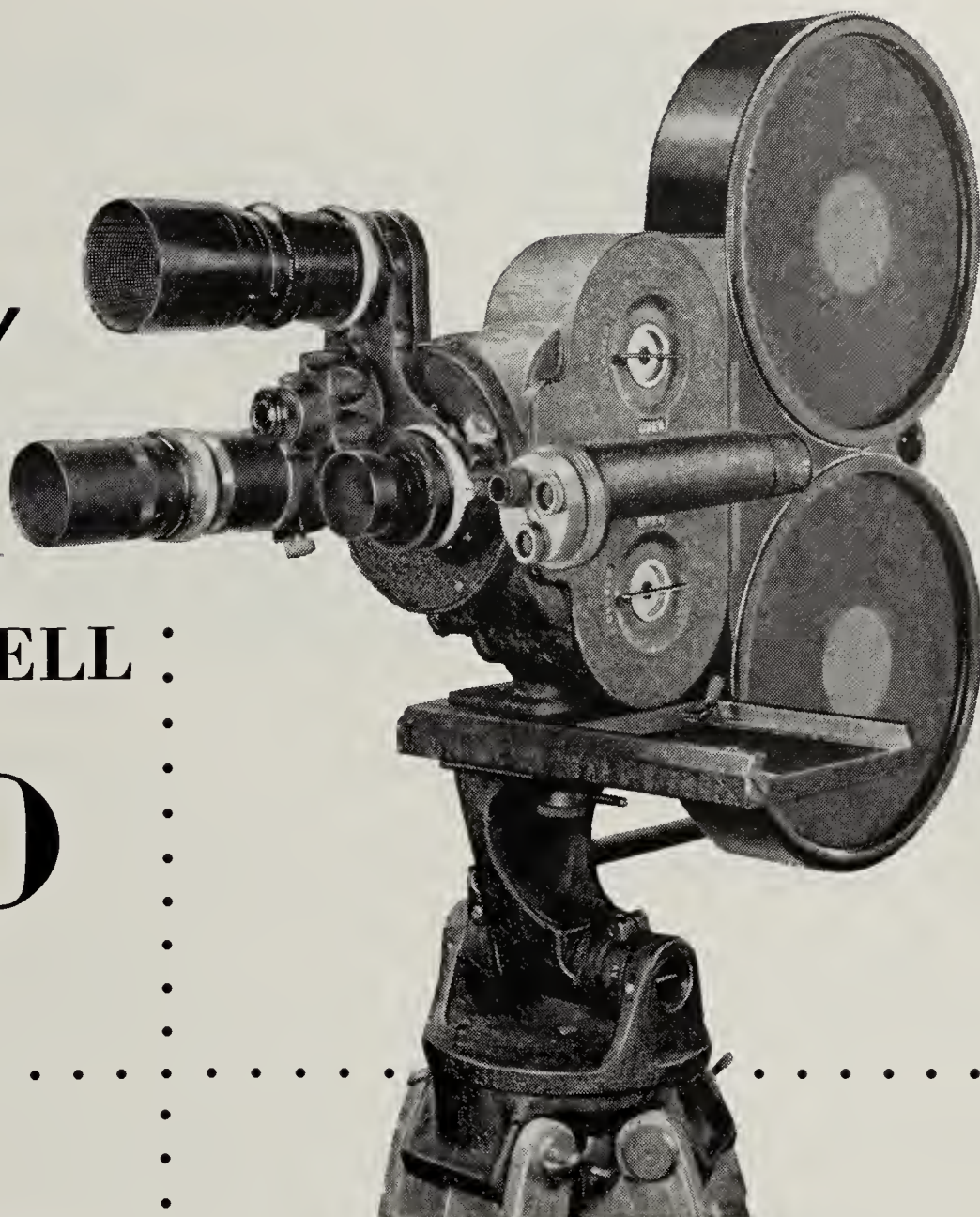


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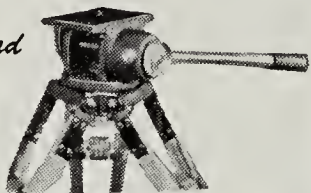
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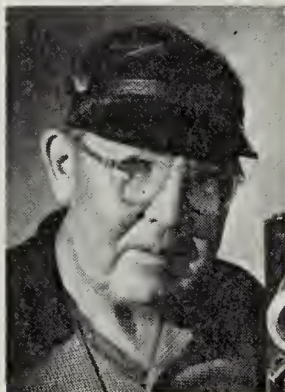
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SURTEES

**ARCHIE STOUT AND BOB SURTEES**, both A.S.C. members, have been honored with awards for photography at the International Film Festival held at Locarno, Switzerland, in July. Stout won 2nd place for black and white photography on "Fort Apache," and Surtees won 2nd place in the color photography division for his camera work on the film, "Unfinished Dance." First place in the black and white division went to an unnamed French picture while a British film received the photography award in the color division.

**JUST A MEMORY**—but a pleasant and enduring one—is the lavish and gala Second Annual Ladies Night and Dinner Dance given by the A.S.C. for its members and their wives or lady friends on Saturday evening, September 11th at the Society's clubhouse in Hollywood. More than 200 attended to feast, dance and be entertained with an excellent program of vaudeville acts and music. Credit for success of affair is due A.S.C.'s president Charles G. Clarke, executive v-pres. Fred W. Jackman, and board member John W. Boyle who labored as a committee to co-ordinate food, drink and entertainment for a pleasurable evening.

**A CERTIFICATE OF RECOGNITION**, the first the American Society of Cinematographers has awarded in its thirty years of existence, was tendered George Mitchell, Honorary Member of the A.S.C. and retiring head of Mitchell Camera Company. Occasion was the A.S.C. Annual Ladies Night and Dinner Dance last month. Certificate commemorated Mr. Mitchell's contribution as a pioneer in the field of motion picture photography and his ceaseless work in advancing the art of cinematography. Mitchell pioneered and developed the world renowned Mitchell studio camera, which is standard equipment wherever motion pictures are made today; also designed the Mitchell

"Professional 16mm." camera, now widely used in industrial and educational film production.

**BEST PHOTOGRAPHED** motion picture released during the 1947-48 season was David O. Selznick's "Duel in the Sun," according to a poll conducted by *The Film Daily*, industry trade paper. "Duel" was photographed under direction of A.S.C. members Lee Garmes, Hal Rosson, Ray Rennahan, Charles P. Boyle and non-member Allen Davey. Ten additional pictures and their directors of photography were also named in the poll as among the best of the season. They are: "The Naked City," by William Daniels, A.S.C.; "Black Narcissus," by Jack Cardiff, A.S.C.; "Green Dolphin Street," by George Folsey, A.S.C.; "Great Expectations," by Guy Green; "The Treasure of the Sierra Madre," by Ted McCord, A.S.C.; "Captain From Castile," by Charles G. Clarke, A.S.C., and Arthur E. Arling, A.S.C.; "The Fugitive," by Gabriel Figueroa; "Easter Parade," by Harry Stradling, A.S.C.; "The Green Grass of Wyoming," by Charles G. Clarke, A.S.C.; and "The Lady From Shanghai," by Charles Lawton, Jr., A.S.C.

**TOLAND PASSES**—Just as we were going to press we received news of the lamentable passing of Gregg Toland, A.S.C., who died September 28th. Toland, director of photography for Samuel Goldwyn Studios, was also a stockholder in the company.

**S.M.P.E.'S. 64TH SEMI-ANNUAL** convention will be held at Hotel Statler, Washington, D. C., October 25th to 29th. Dramatic achievements of the past year in theatre television and high-speed photography will be among the many scientific and technical activities in or related

(Continued on Page 361)

### OCTOBER 4th IS A.S.C. NIGHT

Instead of meeting at the clubhouse, all members of the A.S.C. are invited by the Cinecolor Corporation to a buffet supper to be held at its plant, 2800 West Olive St., Burbank, at 6:30 o'clock Monday evening, October 4th. Following the supper, there will be an interesting screening of late Cinecolor films followed by an instructive technical discussion of Cinecolor processes. A question and answer forum will conclude the meeting.



# ... the future of cinematography

SOME PEOPLE make the easy mistake of thinking that with a light meter, a measuring tape, a few charts, an operator and an assistant, anybody can be a good cameraman. I do not think that this view is shared by the men who supervise picture-making. The cameramen have managed to keep themselves on a high professional plane and it is only natural that some are considered better than others and can command more money. But this independence also provides a spirit of competition which makes for greater opportunities for every man who has ideas and is willing to follow them through, because there is always room at the top for a man who has, by his own efforts, managed to better the mark we call "ordinary."

It is only natural, therefore, to expect that the future will see greater developments in the field of motion picture photography and it is perfectly reasonable to expect that the cameramen themselves will be among those who contribute to these developments. What these changes will be, nobody can foresee; yet they will come just as surely as color followed our first crude black and white moving images.

And that leads us to the fact that there is a great future for all cameramen who are not content to stay in the "ordinary" classification; men who are constantly alerted for some little thing that will open up new channels of development and improvement.

—William Goetz  
25th Anniversary of A.S.C.



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# Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

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NO. 10

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### ON THE COVER

WILLIAM DANIELS, A.S.C., (left) pauses during the shooting of "Family Honeymoon," at Universal-International Studios in Hollywood, to discuss a camera angle with director Claude Binyon and star Claudette Colbert. Lillian Bronson and little Gigi Perreau take an interest in the discussion, too.

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# Current Assignments of A.S.C. Members



Major film productions on which members of the American Society of Cinematographers were engaged as directors of photography during the past month.

## Allied Artists

- JACK MACKENZIE, "When a Man's a Man" (Windsor Prod.), with Guy Madison, Rory Calhoun and Cathy Downs. John Rawlins, director.

## Columbia

- BURNETT GUFFEY, "Knock on Any Door" (Santana Prod.), with Humphrey Bogart and Susan Perry. Nicholas Ray, director.
- JOSEPH WALKER, "Mr. Soft Touch," with Glenn Ford and Evelyn Keyes. Gordon Douglas, director.
- VINCENT FARRAR, "The Crime Doctor's Diary," with Warner Baxter, Lois Maxwell and Adele Jergens. Seymour Friedman, director.
- RUSSEL METTY, "Rough Sketch" (Horizon-Col.), with Jennifer Jones and John Garfield. John Huston, director.
- ALLAN SIEGLER, "Air Hostess," with Gloria Henry, William Wright and Leatrice Joy. Lew Landers, director.
- VINCENT FARRAR, "Blondie's Big Deal," with Penny Singleton, Arthur Lake and Larry Simms. Edward Bernds, director.
- IRA MORGAN, "Jungle Jim's Adventure," with Johnny Weismuller and Elena Verdugo. William Berke, director.
- HENRY FREULICH, "Make Believe Ballroom," with Jerome Courtland, Jimmy Dorsey, Frankie Lane. Joseph Stanley, director.
- REX WIMPY, "Desert Vigilante," with Charles Starrett, Smiley Burnett and Peggy Stewart. Fred Sears, director.

## Independent

- LEE GARMES, "Caught" (Enterprise), with Barbara Bel Geddes, Robert Ryan and James Mason. Max Oplus, director.
- WILLIAM MELLOR, "Love Happy" (Lester Cowan-U.A.), with the Marx Brothers and Ilona Massey. David Miller, director.
- FRED JACKMAN, JR., "Canadian Pacific" (Nat Holt-20th) (Cinecolor), with Randolph Scott and Jane Wyatt. Edwin L. Marin, director.
- LUCIAN ANDRIOT, "Outpost in Morocco" (Moroccan Pictures-U.A.), with George Raft and Marie Windsor. Robert Florey, director.
- BENJAMIN H. KLINE, "Last of the Wild Horses" (Lippert-Screen Guild), with James Ellison, Jane Frazee and Mary Beth Hughes. Robert L. Lippert, director.

- JOHN ALTON, "Reign of Terror" (Walter Wanger-E.L.), with Robert Cummings and Arlene Dahl. Anthony Mann, director.
- HENRY SHARP, "Daughter of Ramona" (Martin Mooney-Film Classics) (Cinecolor), with Martha Vickers, Philip Reed and Donald Woods. Harold Daniels, director.
- PHILIP TANNURA, "An Old Fashioned Girl" (Vinton-Equity), with Gloria Jean and Frances Rafferty. Arthur Dreifuss, director.
- JACK GREENHALGH, "File 649, State Department" (Neufeld-Film Classics). Peter Stewart, director.
- JAMES S. BROWN, JR., "Zamba" (Fortune Films), with Jon Hall, George Cooper and June Vincent. Nate Watt, director.

## M-G-M

- ROBERT PLANCK, "Little Women" (Technicolor), with June Allyson, Margaret O'Brien, Elizabeth Taylor, Janet Leigh and Peter Lawford. Mervyn LeRoy, director.
- HARRY STRADLING, "Barkleys of Broadway" (Technicolor), with Fred Astaire and Ginger Rogers. Charles Walters, director.
- GEORGE J. FOLSEY, JR., "Take Me Out to the Ball Game" (Technicolor), with Frank Sinatra, Gene Kelly and Esther Williams.
- ROBERT SURTEES, "Big Jack Horner," with Wallace Beery, Marjorie Main and Edward Arnold. Richard Thorpe, director.

## Monogram

- MACK STENGLER, "Joe Palooka in the Big Fight," with Joe Kirkwood, Jr., and Lina Romay. Cy Endfield, director.
- HARRY C. NEUMANN, "Gunning for Justice," with Johnny Mack Brown and Evelyn Finley. Ray Taylor, director.
- HARRY C. NEUMANN, "Headin' for Trouble," with Jimmy Wakely and Cannonball Taylor. Ford Beebe, director.
- L. W. O'CONNELL, "Jiggs and Maggie in Society," with Joe Yule and Renie Riano. William Beaudine, director.

## Paramount

- LEO TOVER, "The Heiress," with Olivia DeHaviland and Sir Ralph Richardson. William Wyler, director.
- RAY RENNAHAN, "Streets of Laredo" (Technicolor), with William Holden, William Bendix and Mona Freeman. Leslie Fenton, director.

- JOHN F. SEITZ, "One Woman," with Alan Ladd, Donna Reed and June Havoc. Lewis Allen, director.

DANIEL FAPP, "A Mask for Lucretia," with Paulette Goddard, John Lund and Macdonald Carey. Mitchel Leisen, director.

## R-K-O

ROBERT DEGRASSE, "Follow Me Quietly," with William Lundigan, Dorothy Patrick and Jeff Corey. Richard Fleischer, director.

- ROBERT DEGRASSE, "The Clay Pigeon," with Bill Williams. Richard Fleischer, director.

## 20th Century-Fox

- CHARLES G. CLARKE, "Sand" (Technicolor), with Mark Stevens, Coleen Gray and Rory Calhoun. Lou King, director.
- ARTHUR ARLING, "Mother Is a Freshman" (Technicolor), with Loretta Young and Van Johnson. Lloyd Bacon, director.
- JOE MACDONALD, "Down to the Sea in Ships," with Richard Widmark, Cecil Kellaway and Dean Stockwell. Henry Hathaway, director.
- LEON SHAMROY, "Prince of Foxes" (Shooting in Italy), with Tyrone Power, Orson Welles and Wanda Hendrix. Henry King, director.

## United Artists

- WILLIAM MELLOR, "Too Late for Tears" (Stromberg Prod.), with Elizabeth Scott, Dan Duryea and Don Defore. Byron Haskin, director.
- ERNEST LASZLO, "Impact" (Popkin-U.A.), with Brian Donlevy, Ella Raines and Charles Coburn. Arthur Lubin, director.

## Warner Brothers

- ROBERT BURKS, "The Fountainhead," with Gary Cooper and Patricia Neal. King Vidor, director.
- CARL GUTHRIE, "Somewhere in the City," with Viveca Lindfors and Edmond O'Brien. Vincent Sherman, director.
- ERNEST HALLER, "Happy Times" (Technicolor), with Danny Kaye and Barbara Bates. Henry Koster, director.
- WILFRID CLINE, "Two Guys and a Gal" (Technicolor), with Dennis Morgan, Jack Carson and Doris Day. David Butler, director.
- KARL FREUND, "Montana" (Technicolor), with Errol Flynn and Alexis Smith. Ray Enright, director.
- ERNEST HALLER, "Flamingo Road" (Michael Curtiz-WB), with Joan Crawford, Gladys George and Gertrude Michael. Michael Curtiz, director.
- JACK CARDIFF, "Under Capricorn" (Transatlantic-WB) (Technicolor) (Shooting in London), with Ingrid Bergman, Joseph Cotten and Michael Wilding. Alfred Hitchcock, director.
- SID HICKOX, "Colorado Territory," with Joel McCrea, Virginia Mayo.



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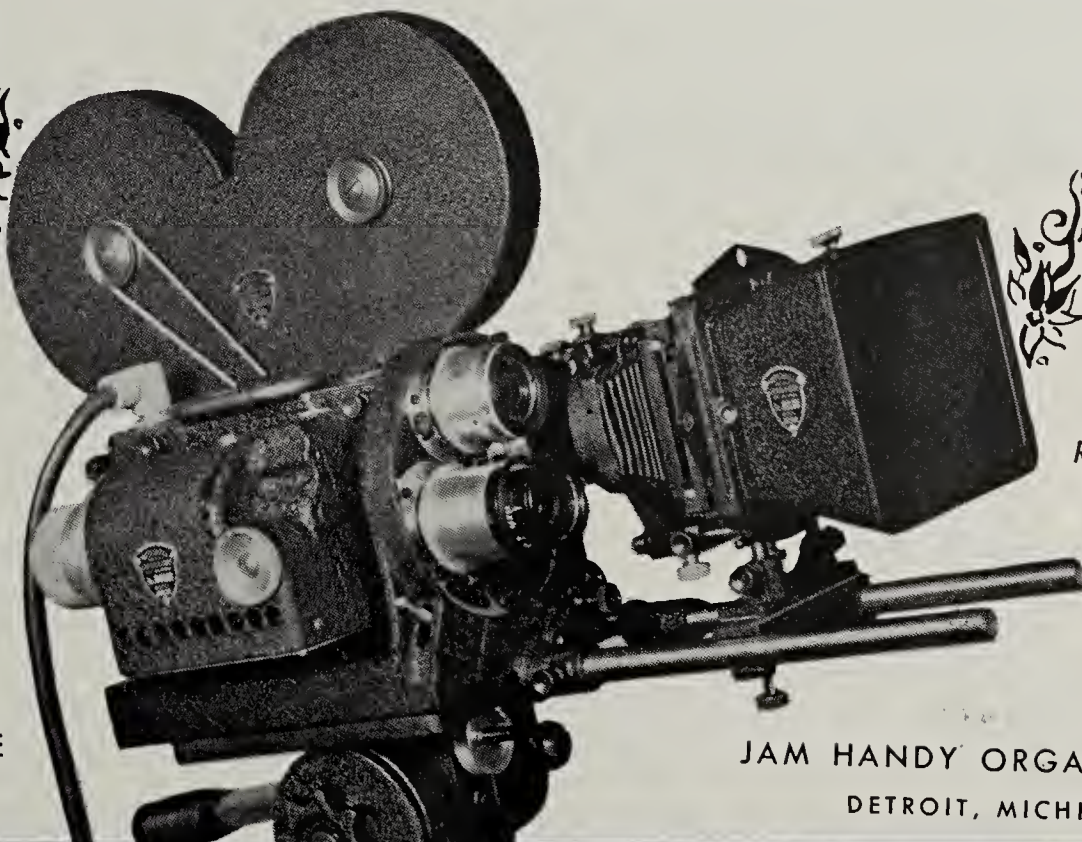
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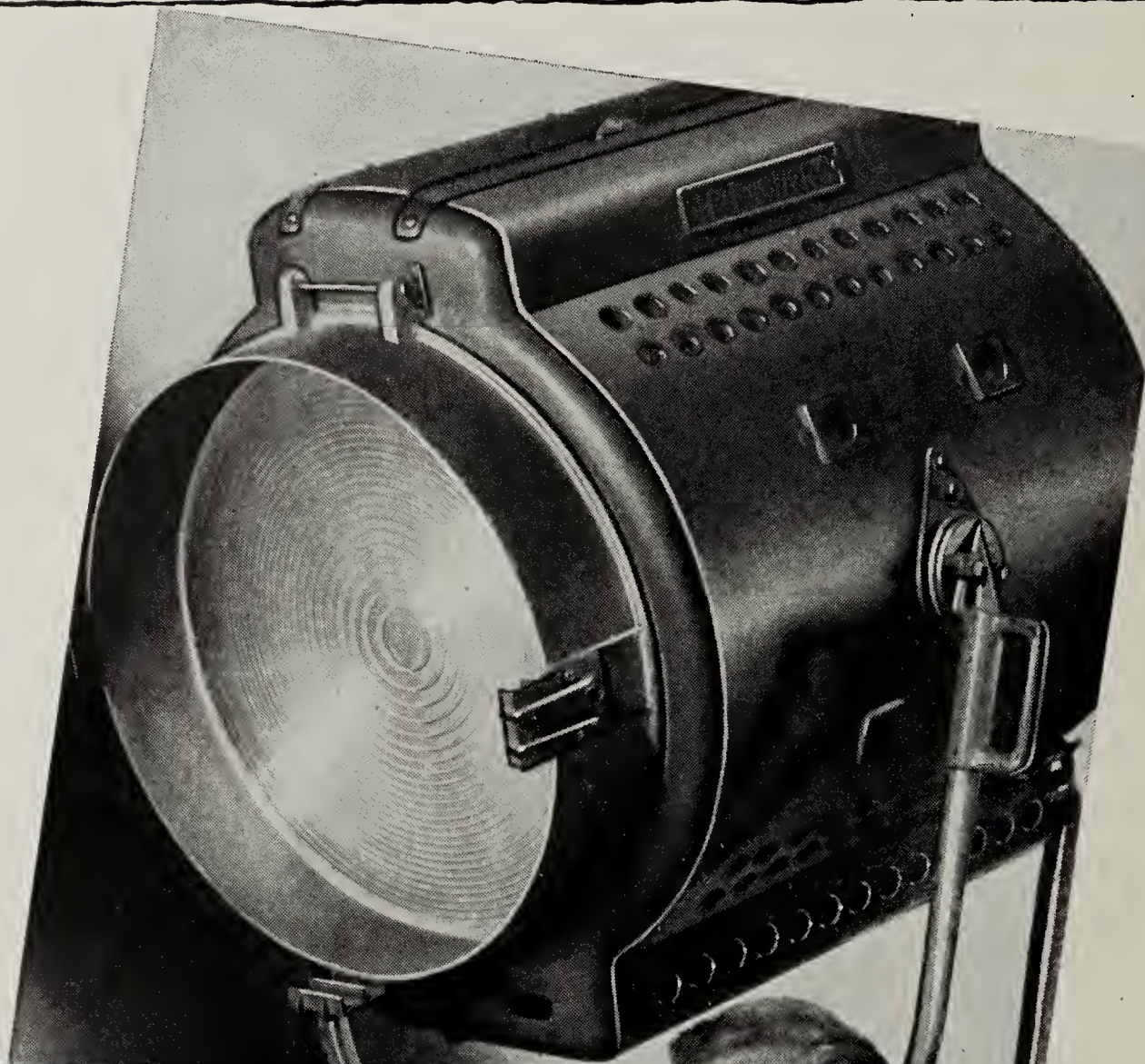
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INDICATING a two-point increase in density of the key light is author Tannura shooting a scene for "The Lone Wolf and His Lady" at Columbia Pictures studios. Howard Robertson, chief gaffer, operates the dimmer bank. Successful use of bank demands a skillful and experienced operator.

## Dimmer Banks And Modern Set Lighting

Multiple dimmer units afford flexible control of illumination by the cameraman and cut production costs.

By PHILIP TANNURA, A.S.C.

THERE IS hardly an instance today where a dimmer bank cannot speed up production and generally ease the director of photography's lighting problems. It seems only a little while ago when it was the custom to have the players on a set confine their action to limited areas defined by chalk lines on the floor. It was the accepted technique for a player to walk up to his chalk line, say his piece or emote, never moving out of the pre-set lighting range. Closeups were always made with the player facing the key light. Those were happy and comparatively easy days for the director of photography.

The advent of sound introduced the use of multiple cameras to cover the action from different locations on the set. The takes were longer and the players now moved more freely about the set, creating new lighting problems for the cameraman. It was almost impossible to keep density of the light constant, as the players moved about the set. Sound pictures also brought new actors to the Hollywood movie lots, mostly players from the Broadway stage. They were accustomed to and demanded more freedom of movement in portraying their roles, the same as they had followed on the stage. The theatre, of course, had a lighting system that permitted centralized control of every lighting source. Flood lights, spot light and overhead lights could be quickly dimmed or raised to fit the action or mood of the play.

Ultimately, of course, the stage dimmers were adopted for motion picture lighting. It was seen that they could also do for the movie set what they had accomplished for so many years for the theatre. Instead of adapting the stage lighting technique in its entirety, the dimmers were fitted by the studios more to the needs of movie set photography. Ultimately what resulted was the important piece of electrical equipment we have come to know as the dimmer bank or dimmer board, as it is also known, which is actually a cabinet or panel combining a series or several series of rotary dimmer switches with cables leading to the various incandescent light sources.

Many of the Hollywood studios built their own dimmer banks, but when their importance was recognized by the equipment manufacturers, certain makers of studio lighting equipment, such as Bardwell & McAlister, designed and put on the market multiple unit dimmer banks of advanced design. Bardwell & McAlister now have a ten unit interlocking dimmer bank that is divided into three sections. The first consists of two 5000 watt interlocking dimmer switches. The second unit comprises two 1000-5000 watt and two 2000-1000 watt interlocking dimmers. The No. 3 bank is a duplicate of the No. 2, and is also interlocking. This unit is pictured on page 356.

Control of the individual units is accomplished by levers, all ten of which are within easy reach of the operator. Interlock is made by a 120° twist of the lever handle. Each unit can be

(Continued on Page 356)

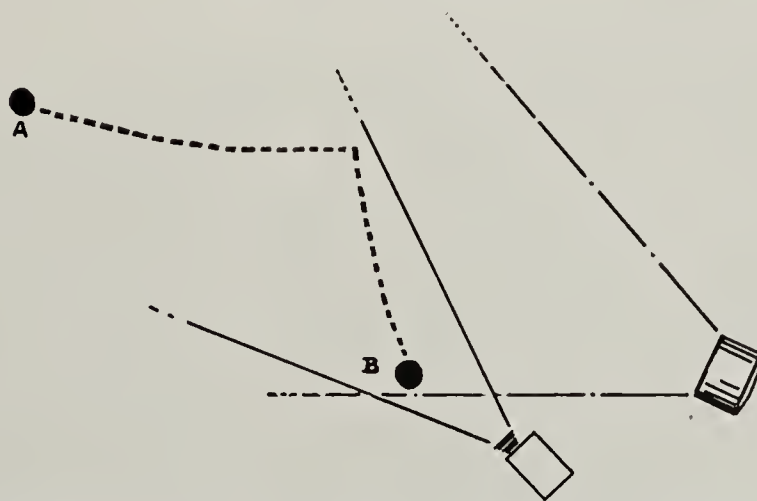


DIAGRAM illustrates typical lighting problem which is easily solved by use of dimmer bank. As player moves from position A to B during shooting of the scene, illumination falling upon him from key light at right increases in intensity as he advances toward camera. By controlling key light through dimmer bank, its intensity can be gradually diminished as player moves in toward camera, with result that density of the light reaching him from key light remains constant for a better photographic result.



# "Johnny Belinda"

**Strict authenticity in lighting and skillful use of filters highlight the beautiful and dramatic photography of this picture by Ted McCord for Warner Brothers.**

By HERB A. LIGHTMAN

**T**ED McCORD, A.S.C., who won critical acclaim for his virile lensing of "Treasure of Sierra Madre," has set a new standard of excellence in his photography of "Johnny Belinda." Realizing that this was as much a story of mood as of action, he slanted his photographic treatment to precisely complement the dramatic requirements of the theme. The result is photography so graphically artistic that it appears at times almost an animated etching.

Directed with great sensitivity by Jean Negulesco, the plot of "Johnny Belinda" concerns a deaf mute girl, befriended by a young doctor from a neighboring town who teaches her sign language and lip reading. She is raped by the town bully and bears his child, whereupon she is os-

tracized by the townspeople—as also is the young doctor, upon whom suspicion naturally falls. When the illegitimate father tries forcibly to take the baby from her, she kills him with a shotgun and is tried for murder. This is the plot framework over which is laid some of the most beautiful cinema to come out of Hollywood in many years.

Set in the mythical towns of Carcadio and Sydney, supposedly on Cape Breton, at the eastern extremity of Nova Scotia, "Johnny Belinda" required extensive location filming at Fort Bragg and Mendocino, California—approximately 180 miles north of San Francisco, on the bolder reaches of the Pacific Coast. It was at Fort Bragg, surrounded by the pine and cypress of the rocky northern coastline,

that the company spent six weeks shooting action in neighboring towns and countryside. So ruggedly beautiful was the landscape that the Director of Photography had constantly to tone it down so that it wouldn't "steal the scene" from the actors.

The prologue of the picture begins with one of the most startling scenes yet to appear on the screen. As the narrator explains that a certain stretch of Cape Breton Island is best approached by boat, the camera adopts a vantage point as if it were actually mounted on the front of a boat skimming in toward shore close to the waves. Then, suddenly, the lens sprouts wings and swoops up into the air to show a panoramic view of the entire countryside. This spectacular scene was shot using a helicopter as a kind of "airborne dolly," and two horses pulling a wagon in the scene became so frightened by the flying windmill that they broke loose from the wagon and bolted for the woods.

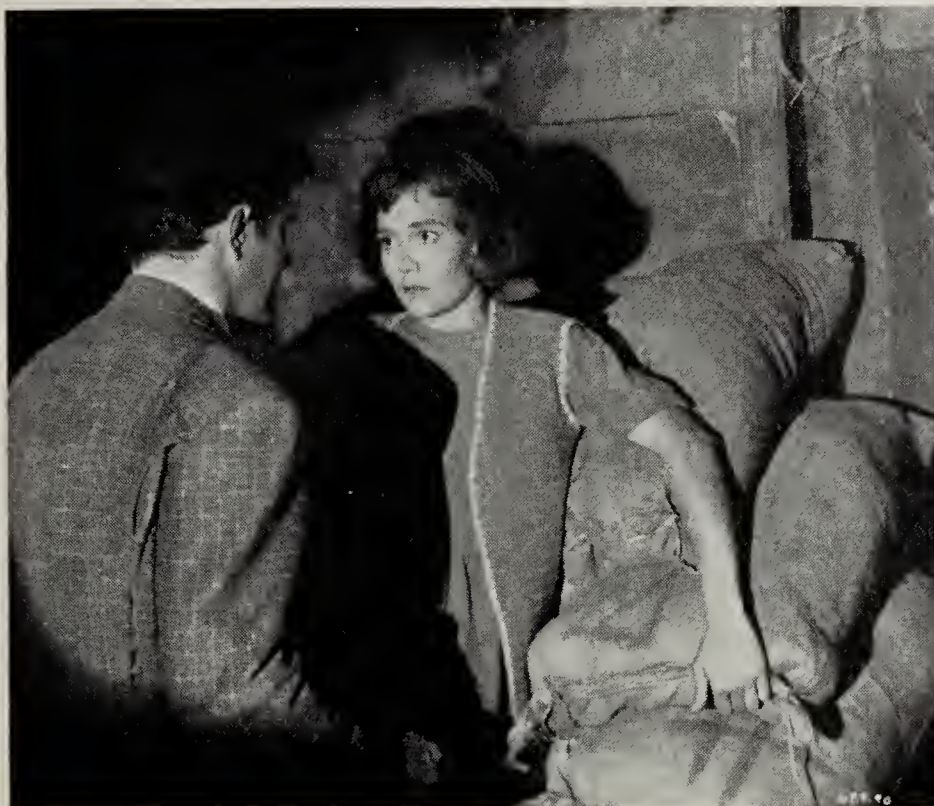
The scenes in the prologue, presented as a kind of back-drop to the action, are almost documentary in approach, suggesting the realistic eloquence of "The Plow That Broke the Plains" and "The River"—and yet, they have an artistic quality that departs from sheer realism. There is a certain rotogravure texture to these scenes that makes them look almost like lithographs come to life. Cinematographer McCord explains that this unusual effect is the result of using a heavy red filter (usually employed for night scenes) while fully correcting the exposure for daylight conditions.

Filters played an important part in the filming of most of the exteriors, and some of the applications were definitely unconventional. For example, a great majority of the outdoor scenes were filmed through a combination of 23A and 56 filters, a technique usually used to produce a soft moonlight effect. The resulting scenes have a richness that adds great-

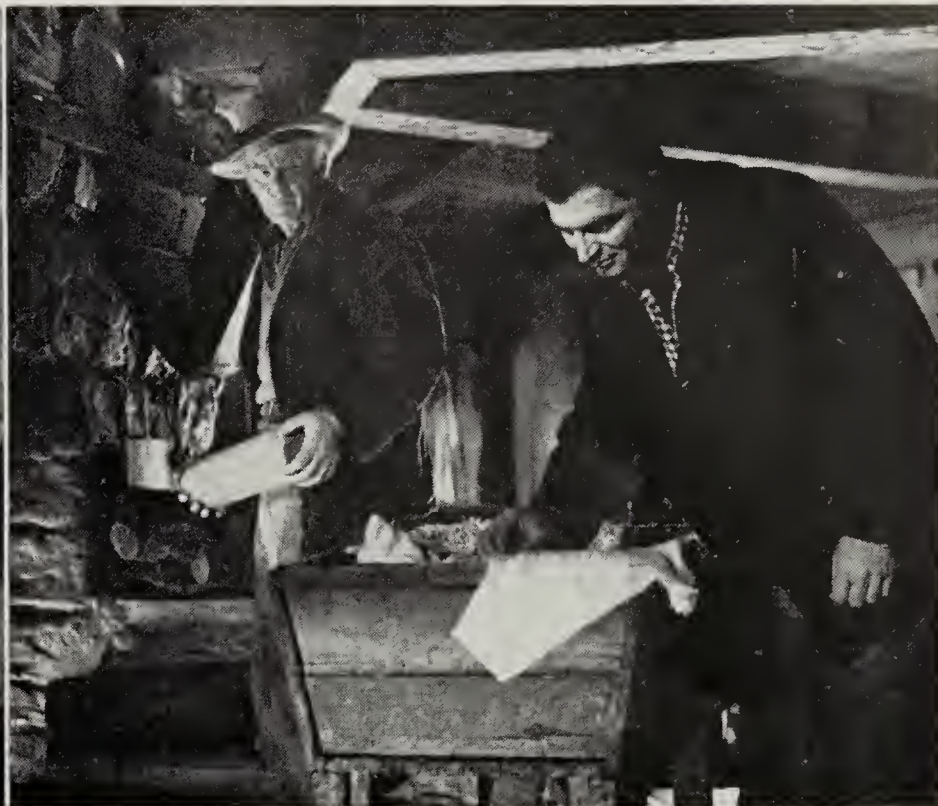


THE RUGGED coastline north of San Francisco was the locale for many of the exteriors for "Johnny Belinda," filmed by Ted McCord, A.S.C. The wind machine in above picture augmented the gentle Pacific breeze to produce stronger wind effects characteristic of the Nova Scotia village for which this location doubled.





**AUTHENTIC** lighting marks the picture throughout. In this hayloft scene a single spot produces the effect of illumination from a lantern.



**IN MOST** of the dramatic scenes, lighting is held to low key, concentrating attention on the focal point of the action.

ly to their pictorial effect. The striking night scenes in the film were achieved through the use of a graduated neutral density filter that darkened the sky almost to black while allowing players moving in the foreground to register satisfactorily. These scenes were shot at sundown so that buildings, trees, etc., might be silhouetted against the horizon. Bright lights placed in the windows of the houses completed the illusion of night.

In one highly dramatic sequence during which the father of the girl is murdered by her seducer, the script called for the somber mood of an impending storm. Actually, the scene was shot on a bright sunlit day that ordinarily would have required an exposure of perhaps  $f/16$ . Instead of stopping down his lens, however, McCord shot the scene *wide* open through neutral density filters with a fog filter added for special effect. Wind machines provided the necessary gale. This sequence was shot at maximum aperture to purposely flatten out the depth of field, thus simulating the two dimensional atmosphere of a storm-lashed countryside. The effect on the screen is entirely faithful to the mood of the sequence and does not even faintly suggest the bright sunlight under which the scene was actually shot.

One of the main problems of location filming on "Johnny Belinda" was the fact that it was impossible to view the daily rushes, as is always done at the end of each day's shooting in the studio. All the cameraman ever saw was an occasional batch of Cinex strips sent up from the lab; he had no exact knowledge of how his special effects were registering on the screen. Another problem typical of this type of filming was the difficulty of match-

ing the quality of the studio footage to that of the scenes shot on location. In setting up his studio scenes, the cinematographer had to imagine how each scene would have been lighted in the actual location, and match his lighting set-up accordingly.

"We bent over backwards to make all lighting co-incide with natural sources," McCord explains. "If a lamp were shown as the sole source of light in the scene, we would use a single lighting unit to duplicate the angle of illumination. If, during the course of the action, an actor stepped out of a lighted area into one where no light would logically fall, we let him go into shadow or silhouette, just as he naturally would. In one scene, all of the light came from a single concealed 5,000 watt lamp of the type we would ordinarily use for a work-light back at the studio."

Lighting in the more dramatic sequences of the picture is held to a low-key which intensifies the impact of the situation by concentrating the audience's attention on the focal point of the action. This effect is especially well conceived in the seduction sequence in which the only source of light is a lantern. The background is allowed to fall off into darkness and the players are dramatically cross-lighted so that they stand out with three-dimensional depth. As the man approaches the girl, his shadow falls across her, completely blacking her out except for her terrified eyes. The audience's attention is sharply directed exactly where it should be.

A 28mm. wide-angle lens was used almost exclusively in filming "Johnny Belinda," even for close-ups. In several cases the wide-angle effect was exaggerated

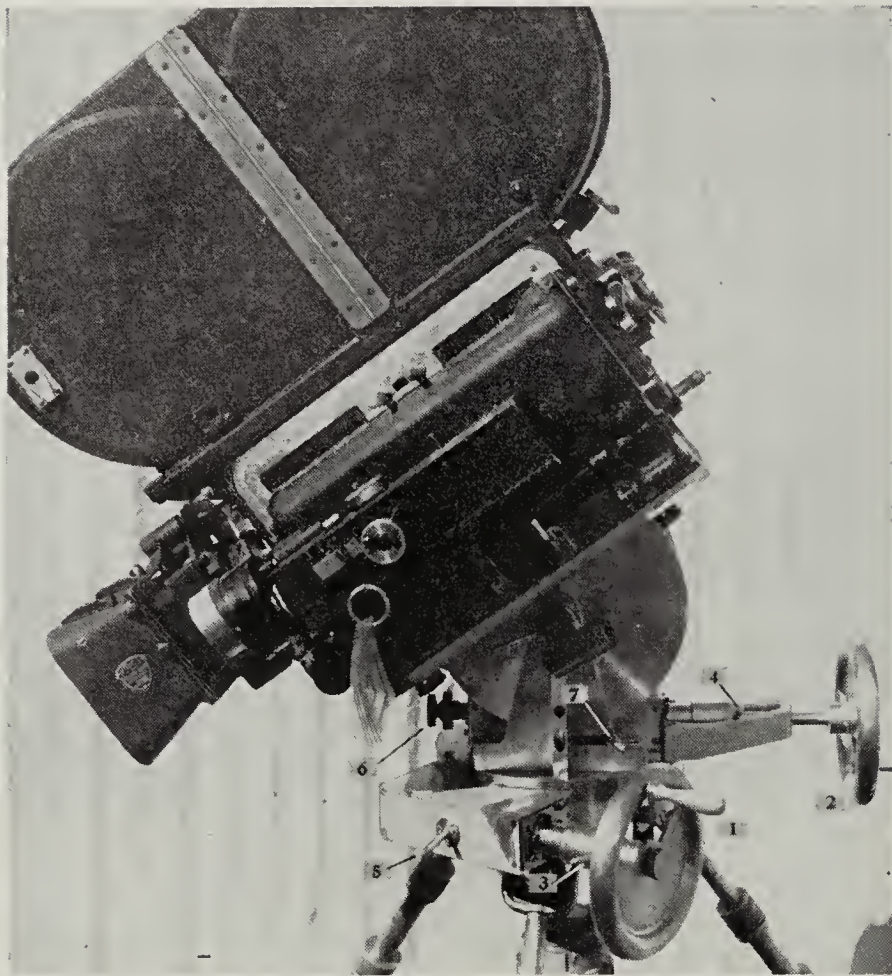
through the use of a diminishing glass, an auxiliary element that fits over the lens and produces an extreme foreshortening of the composition. This element resulted in some striking effects but required very careful handling since it characteristically distorts at the edges of the frame. For this reason, it could only be used in scenes where the camera remained static.

McCord took full advantage of the artistic possibilities offered by the landscapes and settings. His long shots of the countryside with cypress trees silhouetted against the sky are visually poetic. His compositional treatment of a white "American Gothic" church is strongly suggestive of a Grant Wood canvas. Especially effective are shots in which a bit of close-up action is played in the foreground close to the frame-line, while a player's face is centered in the background reacting to the action. In one scene, for example, a violin is played in the foreground while the girl's face is shown reacting to it. In another scene, the hands of the young doctor "speaking" sign language are seen in the foreground as the girl reacts to his message.

Low angles combined with low-key lighting and wide-angle compositions project a style that exactly fits the dramatic moods of "Johnny Belinda." This combination is unusually effective in the child-birth sequence of the film. The scene is the interior of the farmhouse at night. In the foreground is the stairway leading to the second floor bedroom. A hall leads away from the camera toward a kitchen in the depths of the house. The action is played from this distant area to the foreground staircase and on upstairs to the

(Continued on Page 357)





**NEW GEAR** head, which is half the size and half the weight of ordinary ones, allows a 38° tilt and incorporates many unusual features, indicated by figures: 1—crank for panning; 2—crank for tilting; 3 and 4, braking levers; 5—two-speed control for pan operation; 6—release frees camera head from tilting mechanism; and 7—two-speed control for tilting action.

## Two Aids To Better Photography

**New gear head, which lends greater mobility to camera, and novel electric telescoping parallel that speeds up camera operations also effect production economies.**

By RALPH LAWTON

**A**MONG THE several new equipment ideas that have progressed from mere drawing board sketches to reality recently at the Samuel Goldwyn Studios are a radically new precision gear head for cameras and a telescoping, electrically-controlled parallel. Conceived by Gregg Toland, A.S.C., and engineered to completion by head grip Ralph Hoge, both pieces of equipment are potential contenders for Academy awards.

The gear head is the result of Toland's frequently encountered need for one that would afford a greater degree of tilt and that would not "creep" when the camera was tilted at a sharp angle. Toland and Hoge put their heads together, made a few sketches which Hoge took to his workshop, and the new head came into being.

It fits any tripod, boom or crane, weighs 59 pounds compared to the 120 of most heretofore in use, and mounts the camera

six inches lower. It affords a full 38° tilt and complete 360° pan action. It is said to be the first automatically counterbalanced crank head that enables the camera to be operated freely at any angle with the same ease as at the horizontal level. Counterbalancing is by an extension-compression spring of special design. The whole mechanism is so accurately stabilized that it is possible to work the camera with several lamps mounted on it at top, sides or bottom without upsetting balance.

Some of the most important features of the crank head are indicated in the illustration above. Controlled panning is by means of the crank-wheel 1 and the tilting action by crank-wheel 2. Various degrees of tension may be applied to either action by adjusting the braking levers 3 and 4. Either crank may be disengaged from its shaft. Thus the extent of a pan or tilt action may be carefully

set, after a rehearsal, by freeing the crank and setting it so that termination of the pan, or tilt, will come when the handle is at top position—or at any other position desired by the operator. The lever for the panning movement is shown at 5 and for the tilt action at 7.

Levers 5 and 7 also have the function of providing two speeds for the respective movements. Move the levers forward and the tilt or pan action works at high speed; in the opposite position the speed is halved.

The knob shown at 6, when released, frees the tilt head from the gear assembly so that the camera may be moved up or down by hand. Releasing the knob does not release the counterbalancing mechanism, however. There is also provision for using a long handle for the tilt action, when the head is disengaged from the gear train.

The first gear head was completed in May, 1948, and used by Gregg Toland in filming "Enchantment." The head has since been used by Carl Guthrie, A.S.C., at Warner Brothers, and by A.S.C. members Hal Mohr, Lee Garmes, Lucien Andriot and William Mellor.

The electrical parallel, mentioned earlier, is actually a portable elevator for which many uses have been found in the studios. Originally Toland designed it as a flexible camera parallel, but electricians have found it ideal for mounting lights, and as a light boom when a plank is extended from the platform and a spot or floodlight mounted upon it. Even the sound department has taken to it and have frequently used it for elevating a mike boom when same is to be used at variable heights.

*(Continued on Page 352)*



**TELESCOPING**, electrically controlled parallel, designed by Gregg Toland, A.S.C., which affords working heights ranging from 24 inches to 14½ feet.



# SPEED CAMERAMAN

**Rated one of the fastest working cinematographers, Woody Bredell is one of the few Directors of Photography who worked up from the ranks of still men.**

By FRED BANKER

**O**NE OF Hollywood's thousand oddities is the fact that the Director of Photography never operates the camera.

He knows how and, in most cases, was a camera operator for years of apprenticeship. As a Director of Photography he now occasionally glances through the finder to see how the picture looks. He orders the angle from which the shot will be made and the speed with which the camera is to dolly in or out. But he never sits on the little leather seat at the end of the boom and turns the wheels. His big problem on a motion picture sound stage is the lighting.

One of Hollywood's recognized expert directors of photography is Elwood Bredell, known to everyone as "Woody." Bredell's recently completed photographic assignment, "Romance on the High Seas," with Jack Carson and the singing find of the year, Doris Day, is in Technicolor. Typical of Woody's unconventional approach to movie photography was his first conversation about this film with Director Michael Curtiz to whom he is under contract at Warner Bros.

"Mike," he said, "this picture's going to be in color. Let's paint everything neutral."

Curtiz was startled at first but he is a man who will do anything for realistic effects and he soon realized that Woody had a sound idea.

"Whenever one talks 'color' for a picture," said Woody, "everybody goes mad. The writers dream up the most fantastic night clubs for their actors, the set decorators paint wild looking furniture, makeup wants to dye everyone's hair and wardrobe wants a rainbow effect in every scene. Let's try to make it natural this time."

Woody got his way and had all the walls and furniture painted either a neutral gray or a light green. He eliminated all wild colors in the background while allowing only pastels in the costuming. Result was that the players came out in natural relief, there was no meaningless glamorization of the sets and the great majority who saw the preview said it was the first color picture that had not actually hurt their eyes.

Woody is a matter-of-fact person who leaves the arty talk to those who have more time to waste and concerns himself with two questions: Will it work? It is believable?

His photographic answer to the last question made him the town's most sought-after cameraman when "The Killers" was first released.

"The Hemingway story," said Bredell, "was a perfect chance for me because I had always wanted to take a crack at a show where nothing had to be beautiful."



**WOODY BREDELL** and his assistant discuss the lighting on Viveca Lindfors as they prepare to shoot a scene for Warner Brothers' Technicolor production, "Adventures Of Don Juan."

Pursuing his ideal of stark realism Woody won a carte blanche camera decree from Producer Mark Hellinger to light the film exactly as they would be seen in real life.

The famous poker game, consequently, turned out to be one of the greatest departures in film lighting of all time. Bredell reasoned that when six men gather for a little stud in a rooming house they usually have one light to play by and that is the single globe reaching from the middle of the ceiling over the table. He substituted a globe with more power so that the negative would take it, and shined a small light from under his lens in order to make the eyes of the players visible. He did not use a spotlight or any other lighting of any kind. He let the deep shadows under the players' eyes and around the lower parts of their faces remain and the result was a tense, highly dramatic sequence.

Similarly, the party sequence in which Ava Gardner sang in a night club was lighted only by the lamps on the tables themselves. At the opening of the film, the long street down which two men walk toward a hamburger joint, would ordinarily have been flooded with 50 or 60 arcs. Woody used four and let the shadows tell the story.

"Incidentally," said Bredell, "Ava Gardner was the first actress I have ever been able to talk into using no makeup. All we did was rub a little vaseline into her skin for a sheen effect."

Woody said that most actresses, even the comediennes want to look beautiful. He added that many stars can be of great assistance to a cameraman on this matter. Beauties like Gene Tierney and Marlene Dietrich, whose poses are stylized to a great extent, learn to "feel light." After making so many pictures they know instinctively when lighting is wrong even before the cameraman does and they can guide him. He considers June Haver a "cameraman's vacation."

(Continued on Page 353)



# There's Gold In 16mm., Too!

The man who just missed an Academy Award for photography on "Lifeboat" turns his talents to business film production. His first picture, recently completed, is a potential prize-winner about fishing.

By MELBA HOWE

IMAGINE getting the cameraman who filmed "Lifeboat" and scores of other successful feature pictures to make your 16mm. business film! But it's possible. Glen MacWilliams, A.S.C., who lent his cinematographic artistry to Hitchcock's memorable production, has finally fulfilled a dream that has persisted through the many years he piloted big studio Mitchells on sound stages here and abroad.

Glen deserted the Hollywood sound stages just a little over a year ago to form his own 16mm. picture company known as Polly Pictures and dedicated to the making of high-calibre—"Tiffany-class," he calls it—16mm. commercial films. He first became interested in industrial film production through the inspiration of Watterson Rothacker, one of the pioneers of the industry. He made up his mind then and there that one day he, too, would get into the business.

Kept busy as a director of photography by major studios, Glen nevertheless maintained a constant vigil on the development and progress of 16mm. industrial film production. The urge to enter this field became stronger as real professional 16mm. cameras came into existence. He finally capitulated when the advantages of Eastman's new duplicating Kodachrome film was demonstrated. Up until then, the success of a commercial 16mm. color film depended too much upon the caprice of the laboratory entrusted with making the dupe prints. The new duplicating film, he felt, would insure that his careful photographic work would be reproduced in highest fidelity. The organization of Polly Pictures followed.

REPRODUCED at left are film clips from "Forever Angler," initial 16mm. commercial film production by Glen MacWilliams, A.S.C. Pictures represent the rare biological sequence which highlights the film. Top picture shows handful of trout eggs and the succeeding pictures show development of an egg through the embryo stage. The highly magnified closeups were made with a Cine Special and powerful telephoto lens.

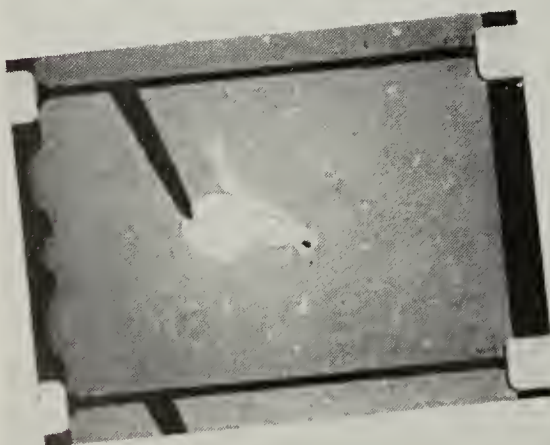
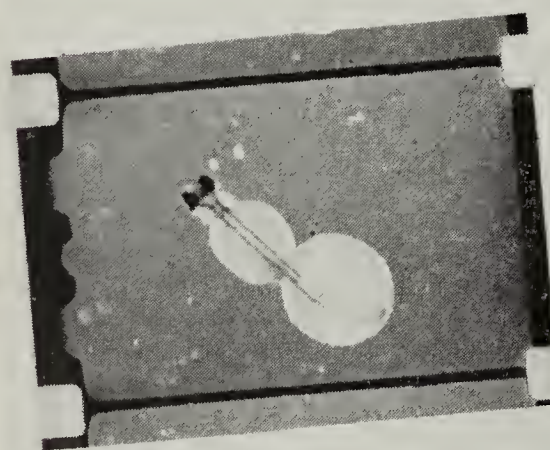
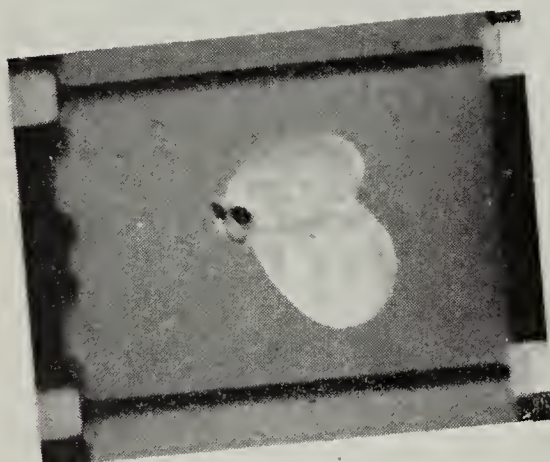
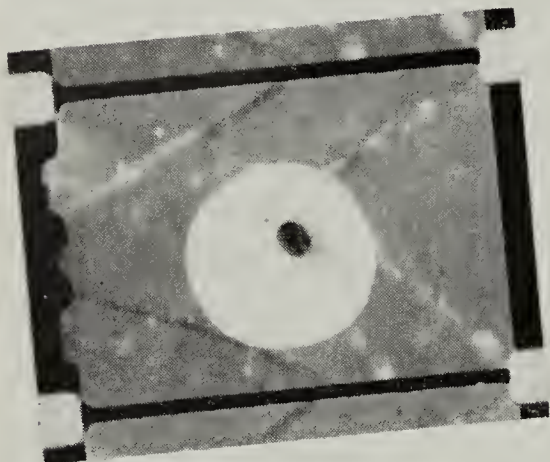
Most of the things he had seen being done in this field—and costing a lot of money—were just a lot of 'nuts and bolts.' "I was convinced," Glen says, "that a commercial motion picture could be produced that would have entertainment, educational and advertising value, all three, and I think this has been proven by Polly Pictures' first production, 'Forever Angler' filmed on Commercial Kodachrome."

His statement has been substantiated by several facts. "Forever Angler" has been accepted by the Audio-Visual Education Departments of the Los Angeles City and County schools to be used in their audio-visual programs. Commercial films, before being accepted by school systems, are subjected to rigid inspection and only those are accepted which are outstanding and in which the advertising, if any, is educational and constructive.

His sponsors, Wright & McGill Company, Denver, Colorado, gave Glen a free rein to write the story and produce the picture, and when it was completed and screened for them they enthusiastically accepted it without a change.

Following preview of the 1200 foot color picture, the press came out with laudatory reviews. Columnist Erskine Johnson wrote: "I'm happy to report that someone has finally made a great juvenile anti-delinquency film. It's a 30-minute 16mm. short in color which preaches, via Bob Burns' narration, 'Take a boy fishing and keep him off the streets.' Glen MacWilliams, who produced and directed for his own company can take a bow." And Jimmy Starr said: "Glen MacWilliams set out to do something subtle in the manner of advertising films. 'Forever Angler' concerns fishing—all kinds—and the care that goes into the making of fine hooks, rods, flies and lures. The production was done exactly in the manner of an important travelogue and the result is excellent. Not only did I suddenly have a desire to go fishing but I was highly entertained by seeing the in-

(Continued on Page 361)





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OLLIE COMSTEDT, A.S.C., and Dorothy Hane, his script writer, recently covered more than 12,000 miles by station wagon throughout Sweden in order to photograph "Swedes At Work and Play," a 16mm. documentary in color.

FOR UNUSUAL shots in the Laplanders' skiing sequence, Comstedt used his rare and costly zoom lenses; but whenever a still different cinematic effect was desired, he improvised new trucking devices, such as shooting from the dog-drawn pulka, as shown at right.



## ***COLOR*** ***is his forte . . .***

**Discovery of a magic lantern in an attic when a boy sparked an interest in screened pictures for Ollie Comstedt, A.S.C., that was to guide his destiny and ultimately lead him to specializing in color photography.**

By ARTHUR ROWAN

**W**HEN OLLE COMSTEDT, one of Sweden's foremost cinematographers and an internationally known expert on color photography, was chosen for membership in the American Society of Cinematographers, he became the first Scandinavian to be so honored by the Society. He was once the first to use 35mm. Plus-X panchromatic film in Sweden—his colleagues refusing to have anything to do with it at the time—and he was the first man in this country to successfully shoot 16mm. Commercial

Kodachrome. He was also the first cameraman to simultaneously acquire zoom lenses for 16mm. and 35mm. cameras. And more recently he received delivery from Karl Freund, A.S.C., of the first Spectra color temperature meter to come off the assembly line—culminating a long list of "firsts" which have played such an important part in his cinematographic career.

Between 1936 and 1939, Comstedt directed the photography on an even dozen Swedish major feature films, including

Signe Hasso's first picture, and also produced, directed and photographed a number of short subjects on his own. In recognition of his achievements in the Scandinavian motion picture industry, he was honored with a Fellowship by the American Scandinavian Foundation to study motion picture color production, and arrived in America just before the outbreak of World War II. He joined the staff of the motion picture studio of the research laboratory of Eastman Kodak Company at Rochester, where he did exploratory work on several color processes. For more than a year he worked with Dr. J. G. Capstaff, one of the world's leading color scientists.

During the war, Comstedt produced a number of films for the State Department. These were documentary accounts of life in the United States and were subsequently distributed mostly throughout South America. Later he directed and photographed a number of 16mm. industrial films in color for some of America's largest concerns. Some of these pictures have since been released in Chinese, Swedish, French, Russian, and Spanish versions.

Comstedt's most recent filming assignment, completed only a few weeks ago, consisted of a series of documentary color films on Sweden and Denmark. The

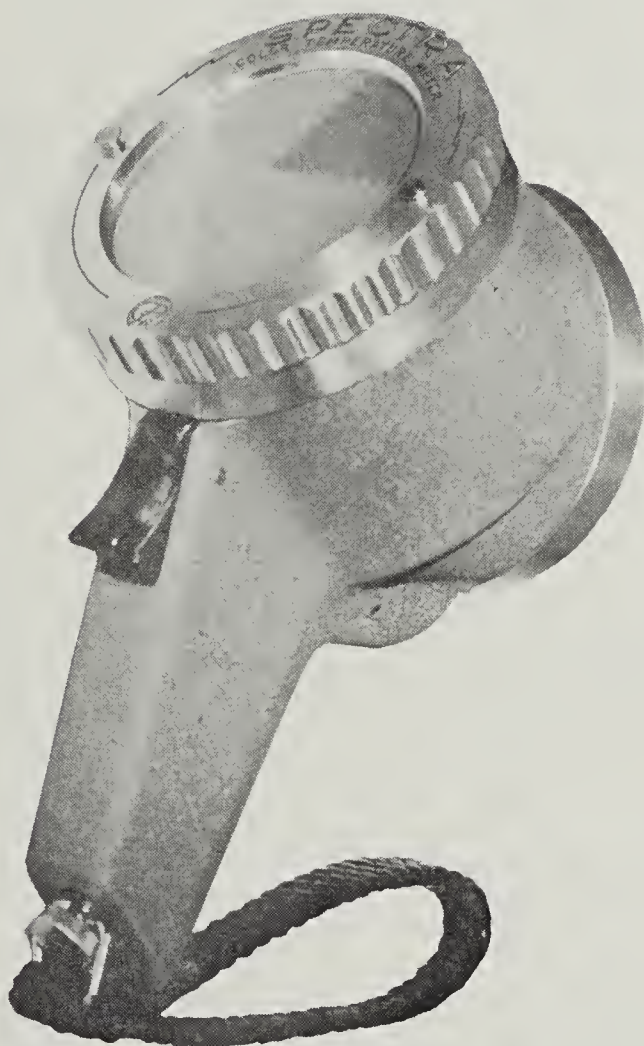
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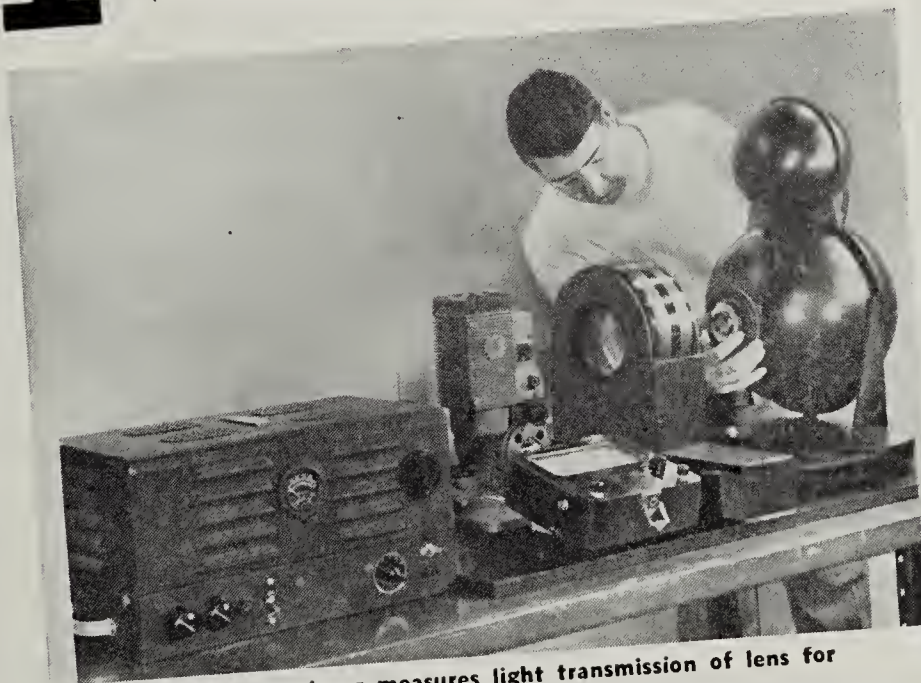


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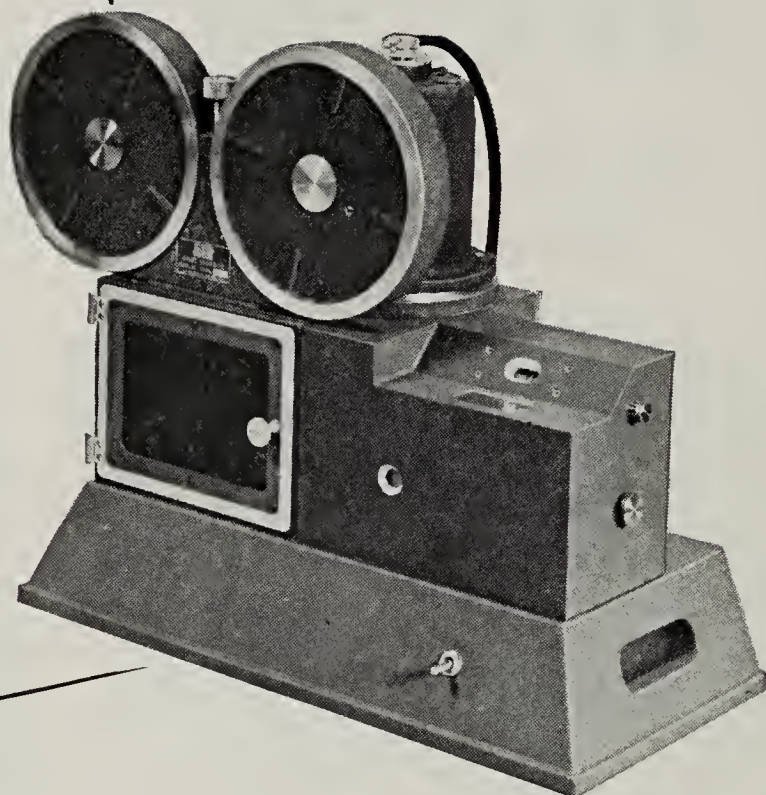
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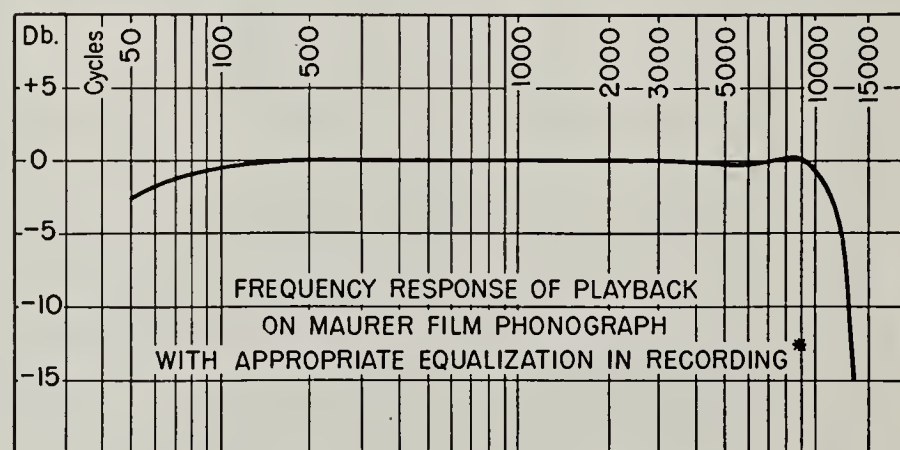
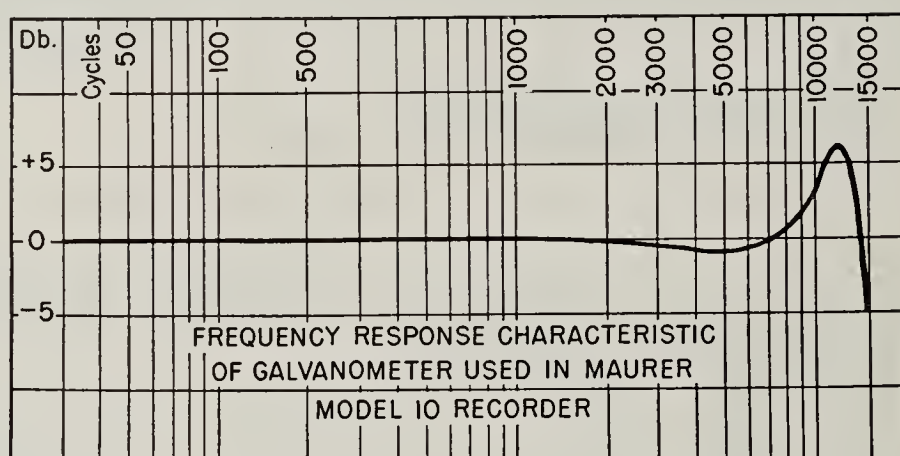
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# 16mm. and 8mm. Cinematography

## S E C T I O N

**T**O THE PRODUCER of commercial 16mm. motion pictures, set lighting may not be the ambitious project it is in Hollywood studios—but nevertheless it involves considerable planning and skill in execution if a professional effect is to result.

When we speak of "sets" in commercial production, we include not only those constructed on the shooting stage, but also location interiors which frequently become stages for the action of a commercial or industrial picture. The basic techniques of set lighting, which we will analyze, apply both to studio sets and location interiors. The main difference is the fact that light can usually be controlled more precisely in the studio than it can on location. On location, however, it is sometimes possible to obtain unusual lighting effects characteristic of the locale itself.

Aside from the basic mechanical problem of getting enough exposurable light to photograph the subject, the cinematographer's main objective is to light his set so that it will appear natural to the situation, in key with the subject, and visually interesting. It is presumed, of course, that he will have sufficient illumination units available to fill the demands of the particular lighting problem. From there on, his aim will be to apply these units toward achieving the best possible result.

Every script, whether it be an entertainment feature or a commercial short, consists of a number of sequences each of which has its own particular mood. In designing lighting set-ups for these separate sequences, the cameraman will do well to consider the mood of each and slant his lighting pattern accordingly.

Some sequences, for example, will call for high-key treatment because a light, positive, buoyant mood is indicated in the script. Certain other sequences—especially those having a somber, mysterious, primitive, dramatic or nocturnal mood—will register most effectively if a low-key pattern of lighting is used.

A high-key lighting scheme implies a generally high level of illumination with relatively light shadow areas and crisp highlights pointing up various elements of the set. In a high-key sequence the background is brightly lighted and heavy shadows are avoided.

Low-key lighting, on the other hand, is characterized by a low level illumi-



On this set the producer has matched use of the most modern 16mm. sound camera and dolly with the best of modern lighting techniques proved in years of feature film production. Because of the smaller, more compact set, a minimum of lighting units, skillfully used, furnished all the lighting necessary. Photo courtesy Raphael G. Wolff Studios.

## Set Lighting For 16mm. Business Films

**How the science of major studio set lighting may  
be applied successfully, yet economically,  
in the production of 16mm. films.**

By CHARLES LORING

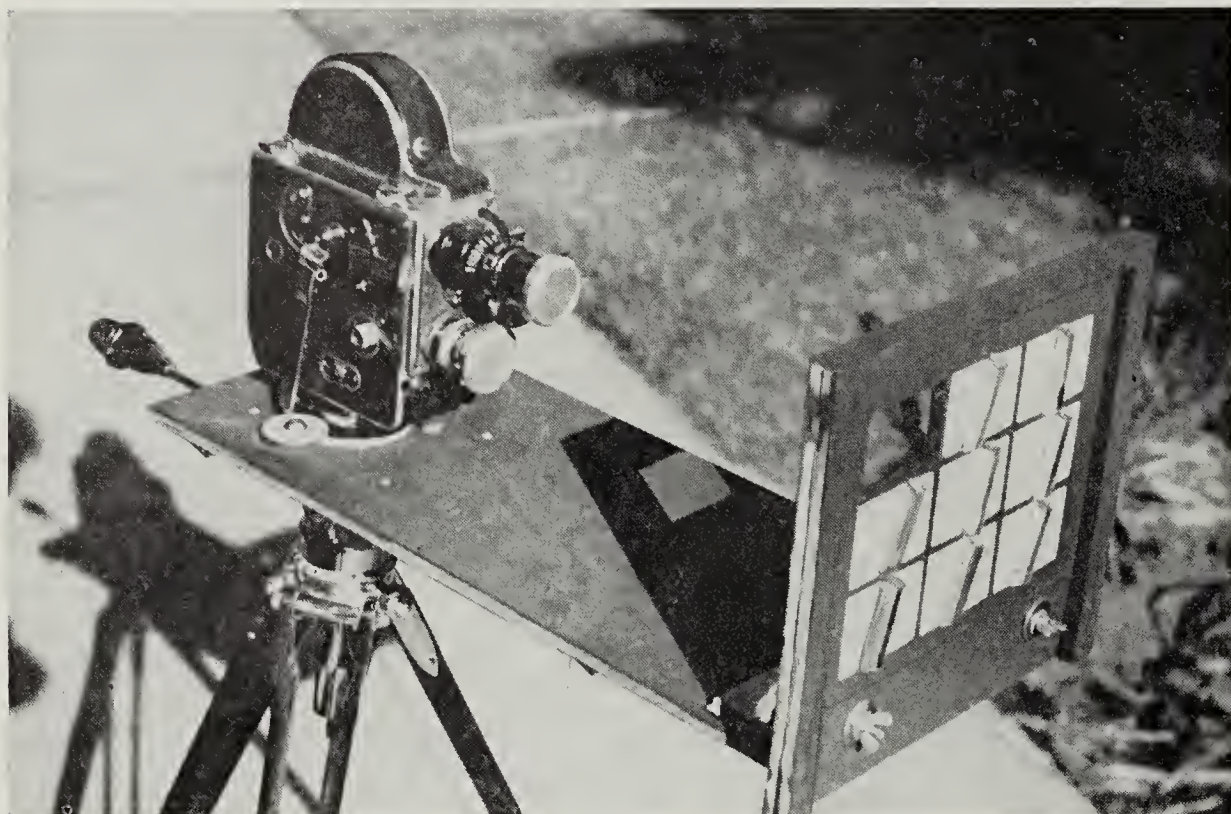
nation, a softer key-light, less fill light, and a greater depth of shadow. The aim of low-key lighting is not merely to create mood, but to concentrate audience attention by withholding light from all but the most important areas of the set.

Having once decided the predominant mood and the lighting key which will best complement it, there yet remains another important consideration—that of

source. Source is nothing more than the element which is supposedly giving off the brightest light in the scene. This may be a sunlit window, an open doorway, a lamp, a fireplace, or anything else that gives off or admits light. No matter what the apparent source in the scene, however, lighting should be so arranged that it will appear as if it is coming from that source.

(Continued on Page 354)





AN INGENIOUS masking device made by amateur movie maker Rich Johnston, which divides the film frame into nine sections, affording nine superimpositions on one frame of film. With it he produced a novelty film in 16mm. color entitled "Nine Little Sisters," in which one little girl enacted the role of nine sisters, all appearing in action in nine windows of a home. The frame, finished flat black on side facing camera, has nine separate removable segments. Space between camera and frame is covered with black cloth while shooting takes place.

## Matte Box Tricks

**Special effects with matte box and multiple exposures are easy for any movie amateur to make. Here the man who used to dream up and execute all the trick shots for the old Keystone comedies tells how to do it.**

By FRED W. JACKMAN, A.S.C.

IN THE DAYS of silent movie making, we made all trick effects right in the camera, the same as movie amateurs do now. Today, advanced production methods in the studios enable these effects to be produced more efficiently by the special effects department, using optical printers and other equipment. But the movie amateur with more time available and with the desire to produce film effects himself can achieve a wide range of cinematic tricks, using only his camera plus a few gadgets which he usually can make in his garage or workshop.

Last month we recounted some of the tricks that are possible with 8mm. and 16mm. cameras, when shooting with the camera held or mounted upside down, in order to produce action in reverse on the screen for both comedy and dramatic effect. This month we shall take up trick effects that are made by double and multiple exposure. Double exposure consists of making two separate exposures on one and the same film area or frame. To be able to do this with your movie

camera, it is necessary that there be some means of winding back the film. An additional help, but one not absolutely necessary, is a frame counter.

Where the camera is fitted with a wind-back knob or crank, winding back film is no problem. Cameras that are not so equipped by the manufacturer usually can have a windback and frame counter installed at nominal cost by one of several firms specializing in this work. Cameras such as the late model Bolex and the Cine-Kodak Special afford both features. Others, such as the Victor Model 5, provide backwinding but do not have a frame counter. Counting frames with these cameras may be done by counting the turns made with the windback crank—each turn representing so many frames of film.

Lacking the windback attachment, the next best thing is to open the camera and wind back the film by hand to a predetermined starting point indicated by a notch previously made on the edge of

the film. This must be done in a dark-room, of course.

To double expose a clean cut image over a previously exposed frame of film, it is first necessary that there be a certain area of that film frame left unexposed during the first exposure, so that the second exposure will register normally. This requires either masking off part of the frame or covering certain objects or parts of the scene area with a black cloth, which should be of velvet or felt. Thus, when the first exposure is made, that part of the scene masked off or covered with the black cloth will appear black to the emulsion and therefore be unaffected by the exposure. To make the double exposure, the mask is removed and placed over that part of the frame previously exposed, and the second exposure made.

Another use for the black cloth is in superimposing a vision or dream action in the scene. To photograph the vision, first shoot the scene with ordinary lighting and correct exposure. Then, capping the lens, wind back the film to the beginning of this scene, and remove the lens cap. The camera is now ready to film the scene or action to be superimposed over the first.

To eliminate any background images in the second exposure, cover the entire set with a black cloth, and have your ghost or image actor perform before it. Set your lens for a half-stop less exposure in making this superimposed shot. On the screen the player will appear as a transparent figure moving around the set with the background clearly visible through his body. An exposure rule to remember in making such shots is to close down your lens for transparent ghosts, and open it up slightly more than normal for opaque figures.

Where multiple exposures are called for, then you will need a matte box for your camera—one carefully and accurately made, that provides slots for masks. The matte box makes it possible for you to mask off any portion of the film frame and to re-expose the previously masked off areas without showing any line of demarcation between the two on the screen. By the use of masks before your lens, you can make one person appear on the screen in dual roles, each occupying separate halves of the film frame.

Matte boxes, of course, assume all manner of shapes and sizes, depending upon the movie amateur's needs. Take the one illustrated here. Actually it is not a matte box at all but a mask frame. The frame consists of nine separate masks which enable the filmer to photograph nine separate images or fractions of the film frame on a single frame of film.

Rich Johnston, of Ogden, Utah, made the gadget in order to photograph a movie idea he had dreamed up which involved

(Continued on Page 350)



**Cine-Kodak Editing and Titling Equipment** will help you to keep your shows moving smoothly...to add editing's "Hollywood touch" to your personal reels. See these movie-bettering items at your Kodak dealer's...



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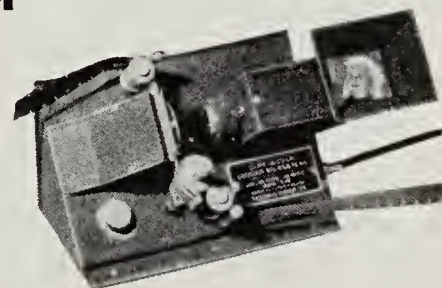
A sturdy rewind is a real editing convenience. And the Cine-Kodak Master Editing Rewind for 16mm. movies, part of the Master Editing



Outfit pictured right, is tops among rewinds. It's steady enough for 1600-foot reels...and its all-metal construction keeps it rock rigid, always. The Cine-Kodak Senior Editor, on a base of well-cured hardwood, also includes an excellent rewind that accepts all 8mm. and 16mm. reels through the 400-foot size. Both outfits have geared spindles, of course, for convenient winding and rewinding.

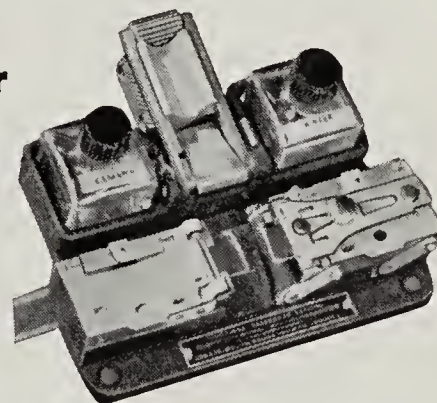
### **Cine-Kodak Editing Viewer**

Cine-Kodak Editing Viewer shows your movies as you wind or rewind your films...really simplifies editing. Your movies are projected on a ground-glass screen and when you come to a scene to be cut, or to a place where titles or other scenes should be inserted, finger-tip pressure on a lever harmlessly notches the border of the frame being viewed, to make possible easy reference. The Cine-Kodak Editing Viewer, part of the Cine-Kodak Master Editing Outfit, is also supplied separately in 8mm. and 16mm. models for use with other rewinds.



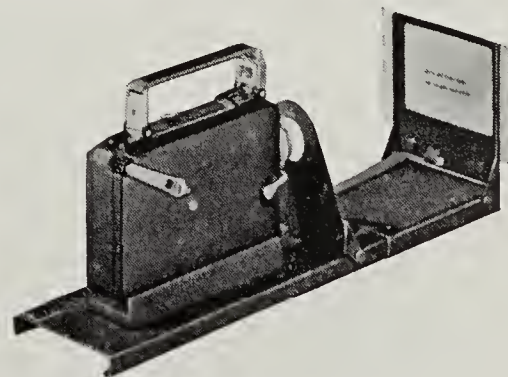
### **Cine-Kodak Senior Splicer**

A splicer that welds film securely and evenly so that your splices stand up in use and don't "jump" in projection is a basic editing requirement. Cine-Kodak Senior Splicer qualifies in both respects—and on the count of convenience, too. This handy little unit contains everything needed—a block to hold film securely, a cutting arm, a scraper to prepare the base for the splice, and a pressure clamp that joins the film and applies the *equalized* pressure essential to smooth, durable splices. Cine-Kodak Senior Splicer, included with the Master Editing Outfit and the Senior Editor, can be purchased separately for use with both 8mm. and 16mm. film.



### **Cine-Kodak Titler**

Titles add the finishing touches to your personal movie reels...keep your film story flowing smoothly. The inexpensive Cine-Kodak Titler provides the *easy* way to home title making. You simply slip a typed or lettered title card into the easel (a supply of colorful cards is included with the outfit), align your camera with the Titler's built-in lens, and press the exposure button. The result—storytelling punctuation for your movies. The Cine-Kodak Titler can be used with all Cine-Kodak cameras—8mm. and 16mm.—except the Cine-Kodak Special.







**SPLICERS CAN BE** cleaned of gummy substance adhering to the pressure plate by applying film cement with regular applicator, then wiping quickly with a clean dry cloth. The acetone in the cement will soften the gummy accumulation.

**SHORT LENGTHS OF TITLE** film, which you process yourself, can be dried quickly and safely by using a simple rack consisting of an ordinary wooden dress hanger, which has been pierced with four or five holes and 12-inch lengths of stout wire run through. Form hooks on both ends of each wire. Hang film on hooks through sprocket holes.

**FILM WILL NOT UNRAVEL** from overloaded reels, when threading your projector, if you will first place a stout rubber band around the sides of the reel. Remove the band just before starting your projector.

**TO PLACE OIL IN** hard to get at lubricating holes on your projector, place a beverage straw over the tip of your oil can. Straw becomes an extension of oil can spout.

**TO GAIN HEIGHT FOR** your easel or wall type movie screen, tie a heavy batten in upright position to the back of a dining chair, insert a hook at the top and suspend your screen.

**LENSES FROM DIME STORE** reading spectacles may be used as supplemental lenses for titling and ultra-closeup photography. Focal range of such lenses is usually indicated on small label on each lens, so you can easily make a choice to fit your needs.

**CARBON TETRACHLORIDE**, sold in small containers as a cleaner and spot remover, is ideal for cleaning your movie films, black and white or color. It quickly evaporates, leaves no oil or scum. Apply small amount to lintless white cotton cloth and press against film between fingers, shifting cloth occasionally to bring clean surface to bear against film as it is being rewound. Be sure to use Carbon-Tet in a well ventilated room as the fumes are toxic. The material is noninflammable.

**INK THAT FLOWS** smoothly on celluloid and therefore ideal for lettering titles on this substance is Craftint No. 147, sold by the Craftint Mfg. Co., Cleveland, Ohio.

## MATTE BOX TRICKS

(Continued from Page 348)

showing the doings in a day of nine little sisters. His nine-year-old daughter enacted all nine parts—each in separate costume and dress and with different props. The film, "Nine Little Sisters," has since taken many prizes in amateur film contests.

Shooting the picture required making nine separate exposures on a hundred-foot roll of film—winding back the film eight times and re-aligning the camera for the same number of times. The setting was an ordinary window, and each time the action began with the drawn window shade being raised to reveal the girl behind it. She was shown in such action as telephoning a friend; listening to a horror radio program; cramming for a school exam.; playing with her favorite doll, etc. On the screen, the picture begins with an introductory title that states that "Once upon a time there were nine little sisters who lived in the same village, on the same street, in fact in the very same house." And then each of the nine window shades are raised at carefully timed intervals until all are up and we see the nine sisters all performing simultaneously in carefully rehearsed action. It is a startling novelty as an amateur picture, and is the result of skillful and painstaking camera work on the part of the filmer.

The mask frame, as may be seen, is mounted on a substantial base before the camera and is divided into nine sections. Each section fits by pressure into its proper opening and the whole surface facing the camera is coated with black flock. When actual shooting takes place, a black cloth extends over the camera and mask frame, forming a light-tight matte box. In shooting the picture, one of the mask sections is removed, and the scene lined up by sighting through the camera's reflex viewfinder. The shot made, the mask is replaced and another one removed, and the procedure repeated. This is continued until all nine sections of the film frame are exposed.

With a little ingenuity, any variation of this simple matte frame may be used by the movie amateur to achieve multiple exposures in his movies. The essential requirements for a matte box are, first and foremost, that it must be securely fastened to the camera and, second, it must be carefully aligned with respect to the camera so that the second or subsequent placement of masks will be accurate.

If you own a typewriter titler, you can convert it temporarily into a matte box by simply enclosing the space between camera lens and title card holder to make it light-tight. This can be done by making a box- or cone-shaped enclosure of ordinary cardboard. This should be painted flat black on the inside and be light-tight,

especially where it fits around the title card holder.

The card holder takes your mattes and enables you to provide markings around the frame to indicate the exact center, as well as quarter, eighth and angular divisions. The mattes may also be made of cardboard and should be painted black on both sides. Ordinarily Jet Oil shoe polish or India ink will do for this.

A thing to be remembered is that the farther away from the camera the mattes are located, the sharper the line of demarkation between the two images on the screen. For this reason, where a sharp line of demarkation might destroy the trick illusion, the matte is kept closer to the lens. It is advisable for the beginner to make a few tests with his matte box and lens stops at different positions, in order to determine which combination will give the most satisfactory results. By trying different lens stops with the mattes set nearer or farther away from the lens, ultimately you will discover the right combination that will produce the most satisfactory blend at the dividing line between the two or more exposures. Such tests may be quickly developed by hand to determine results before proceeding with regular shooting.

By way of suggesting some of the numerous trick effects that are possible, using the multiple exposure and matte box technique, the following are a few of the comedy effects we contrived for some of the old Mack Sennett Keystone comedies, using only a matte box or a few yards of black velvet:

(1) The gag of an endless stream of Keystone Kops emerging from the rear door of a sedan. The camera would focus on the car from an angle up front, with half of the car masked off, thus obscuring the horde of Kops entering the car door from the opposite side.

(2) The crash of two cars at the intersection of two streets at a V. The scene was masked so matte bisected the scene exactly in the center of the V. Then the Kops cars were timed to meet at the same point from the opposite direction. In the editing, the shot was cut abruptly where the cars meet and an exposure shot intercut at this point, followed by a close-up of the wreckage.

(3) Action taking place before a garden wall with Mt. Fujiyama or some other notable peak or edifice in the background; or the same garden wall made to appear as a dam for a lake—the lake in the upper half of the frame being a superimposition of a postcard picture, as was the image of Mt. Fujiyama. In both instances, the mattes would divide the scene horizontally. (Turn to pg. 352.)



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Yes, the superiority of exposure determination through the accurate measurement of incident light has been proved. Incident light is all the light illuminating the camera side of the photographic subject. This light comes from behind and in front of the subject—from above and below and from both sides.

In determining photographic exposure with the incident light method, it makes a whale of a difference whether you use an exposure meter specifically designed for incident light measurement, or, a reflected light type meter which is altered only in one department to read incident light.

Only a 3-dimensional, hemispherical light collector and integrator, such as the patented PHOTOSPHERE\* on the Norwood Director will collect, integrate, and transmit to the photoelectric cell all of this incident light.

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EXPOSURE METER



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PHOTOSPHERE\*  
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Then, the 3-dimensional light collector and integrator must be augmented by an especially designed, precise microammeter—a photoelectric cell of certain definite characteristics together with especially arranged foot-candle scales, calculating dials, and accurate calibrations referenced from an internationally recognized light standard. When these points are provided for, you have a true incident light exposure meter.

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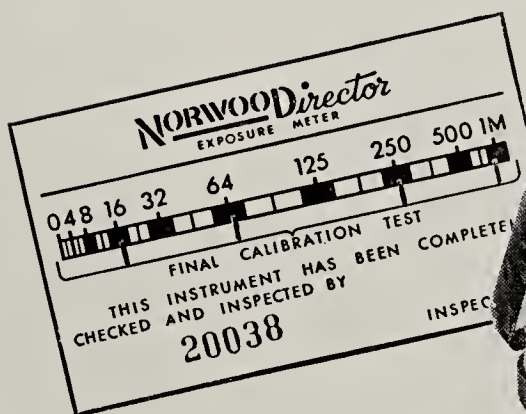
The development of the Norwood Director by Captain Don Norwood, nearly ten years ago, marked the only major improvement in determining photographic exposure in a generation. For several years the Norwood meter was available only to professional cameramen in Hollywood motion picture studios. Now, tens of thousands of professional and amateur photographers use the amazing new Norwood Director and it has received their unqualified and enthusiastic endorsement.

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## 25 YEARS AGO

### With A.S.C. and Members

• GEORGE RIZARD accompanied by electricians and other assistants, moved their equipment from the studio to Evelyn Brent's home in order to shoot closing scenes from Metro's "Held To Answer." Miss Brent had been confined to her home because of illness.

• JACKSON J. ROSE's comprehensive and authoritative article on the use of reflectors appeared in the September, 1923, issue of *The American Cinematographer*.

• ROSS FISHER was shooting Douglas MacLean's independent production, "Going Up."

• JOHN SEITZ was in charge of The American Society of Cinematographer's fourth annual ball to be held in October, 1923, at the then new Biltmore Hotel ballroom.

• H. LYMAN BROENING left for Tennessee with Allen Holubar company to film "The Human Mill" for Metro.

• STEPHEN S. NORTON was enlisted by John Griffith Wray to aid in the filming of important sequences for "Annie Christie," a Thomas H. Ince feature.

• JOHN ARNOLD was in charge of the camera work on Viola Dana's newest picture for Metro, "Angel Face Molly," directed by Oscar Apfel.

• CHARLES RICHARDSON, who had been assistant to Arthur Edeson for six years, was admitted to membership in the A.S.C. He had recently completed "In Old Madrid," starring Clara Kimball Young.

• LUCIEN ANDRIOT completed the photography on "In the Palace of the King," for Emmett Flynn. Previously he had photographed "Monte Cristo" and "The Connecticut Yankee," also for Flynn.

• CHARLES ROSHER was making preparations for filming "Dorothy Vernon of Haddon Hall," which was to star Mary Pickford under the direction of Marshall Neilan. He had just completed photography on "Tiger Rose," for Warner Brothers through courtesy of the Pickford Studios to whom he was under contract.

• REGINALD LYONS was enjoying a thirty day location trip to San Luis Obispo where he was photographing an automobile racing picture for Universal starring Reginald Denny. An automobile racer himself, Lyons had his racing car along and was burning up the track when not occupied behind the camera.

• ANDRE BARLATIER returned to Hollywood from San Mateo where he had been photographing "Half a Dollar Bill," Max Graf-Metro production.

(4) Fatty Arbuckle ducking behind a narrow post, then emerging from the opposite side—the result of a simple vertical half-and-half masking in which Arbuckle walked behind the pole while the mask was in one position and from behind it when the mask was reversed in position and the double exposure made.

(5) In another instance a scene called for Chester Conklin to dangle perilously from a third-story window while Phyllis Haver, reaching from a window in the next floor below tried to rescue him, while an angry bull snorted and pawed near the building on the ground floor, ostensibly awaiting Conklin's fall. Filming this scene called for making three exposures and masking off the frame into three horizontal sections, as no three-story building was immediately available—especially one with a bullpen adjacent.

To summarize, here are some of the effect shots you can achieve, using a matte box: a subject dreaming, with the dream vision appearing in a portion of the scene; player disappearing behind a pole or tree; the action of two parties at two different locations, as in a two-party telephone conversation; the action of two groups taking place in rooms one above the other—for instance, a big party in progress on the second floor being interrupted by tenants

in the apartment below banging on the ceiling with a broomhandle; or a four-image montage in which four separate actions occupy each of the four quarters of the film frame, a pattern made popular by a well known newsreel company. There are many other possibilities, too numerous to mention.

Whether you are about to shoot a homey, backyard comedy or a serious photoplaylet or documentary, it is possible to greatly enhance the production value of your picture with skillfully executed matte shots, when and if they can be appropriately applied. Never, we should admonish again, should you use a trick effect simply to demonstrate it on the screen. Unless the effect will add to the story telling, unless it can be applied subtly, it is best to avoid it. On the other hand, don't neglect the use of matte shots if they can definitely enhance your picture. Nor should you avoid an attempt at matte shots because you haven't ready-made equipment for the purpose. As pointed out, some of the best trick sequences in amateur movies have been accomplished with matte boxes contrived as part of a filming project and easily put together from materials gathered around the family garage or workshop. You can do the same.

## TWO AIDS TO BETTER PHOTOGRAPHY

(Continued from Page 340)

Ordinarily when a company goes into production on a set, several parallels of assorted heights are kept available on the stage. Toland's telescoping electrical parallel replaces all of them. Affording parallel heights ranging from 24 inches to a maximum of 14 feet 6 inches, it provides a wider range of convenience than would an assortment of old style parallels and takes up less room on the set. Moreover, fitted with wheels, it is more readily and easily moved.

Constructed of welded tubular steel, it comprises three telescoping sections which are raised or lowered by means of four 3/16 inch stainless steel cables. These terminate at a windlass driven by a powerful 110-volt DC motor that will lift a maximum of 2800 pounds. Motor control, instead of being on the platform, is at the base of the parallel as a safety factor to prevent accidents to any who might be standing beneath the platform when it is being lowered.

Four swivel, rubber-tired casters give the parallel easy mobility and there are four step-locks, one adjacent to each caster, which enable securing it solidly in position after being set in place. Its total weight, including the motor and driving mechanism, is 900 pounds. It may easily

be telescoped, loaded on a truck and taken on location, in which case power for the motor is supplied either by the electrical department's booster light generator, or by a small DC generator available for the purpose.

Another use which has been found for the parallel is in mounting background projection equipment at an elevation—particularly where the elevation must be adjusted as the process shot is made in order to keep the angle in conformity with that of the camera where camera is moved in or pulled back.

First developed and used in 1947, the parallel more recently saw service at Warner Brothers studios when Ernie Haller, A.S.C., employed it in filming "Happy Times." Karl Freund, A.S.C., used it on "Montana," Anton Hoch, A.S.C., found it of immeasurable help when shooting interiors for "Tulsa," and it was responsible for some of the unusual photographic shots by Joe Valentine, A.S.C., on "Rope."

Both the gear head and the electrical parallel are now being built and sold or leased by Thomas Rentals Company, Inc., of Hollywood in which Ralph Hoge is also interested.





## SPEED CAMERAMAN

(Continued from Page 341)

"What's photogenic?" Woody replied to a query. "That's a term we apply to someone you can hit in the face with a tomato and they'll still look good—from any angle."

For six of her most important pictures Deanna Durbin requested Woody Bredell. Deanna was particularly intrigued by Woody's unique method of doing her closeups and always called for "Woody's cookie jar" when closeup time came around.

Seems that Bredell once noticed the sun's rays reflecting through a five-gallon jug of water onto the wall of a sound stage. It suddenly struck him, since cameramen are always searching for some brilliant halo effect with which to back-ground actress' closeups, that the shimmering effect of the designs through the water jug would be perfect for this purpose. He got an old-fashioned five-gallon cookie jar, filled it with water, shined light through it to Deanna's background and she was delighted with her closeups.

Bredell said that Doris Day is one of the least difficult actresses in Hollywood to glamorize because she has so much natural sparkle.

"All I had to do in 'Romance on the High Seas,'" he said, "was give her plenty of light and use the little pink or blue spot under the lens. This brought out the natural color and sparkle of her eyes."

Woody said this film, in spite of the fact that he handled the very difficult Technicolor assignment on Errol Flynn in "Adventures of Don Juan," was the toughest of his career. He used 168 electricians on 350 spotlights which required two extra generators to boost the regular studio power.

Said Woody, "I discovered that when you're lighting romance on the ocean you need a separate tier of lights for the ocean, the horizon, the ship and the actors."

Bredell is such an ardent believer in color that he uses it to raise the spirits of the actors as well as the audience. Even in a black and white picture he uses colored light in backgrounds just because it makes the scene a warmer one in which to perform.

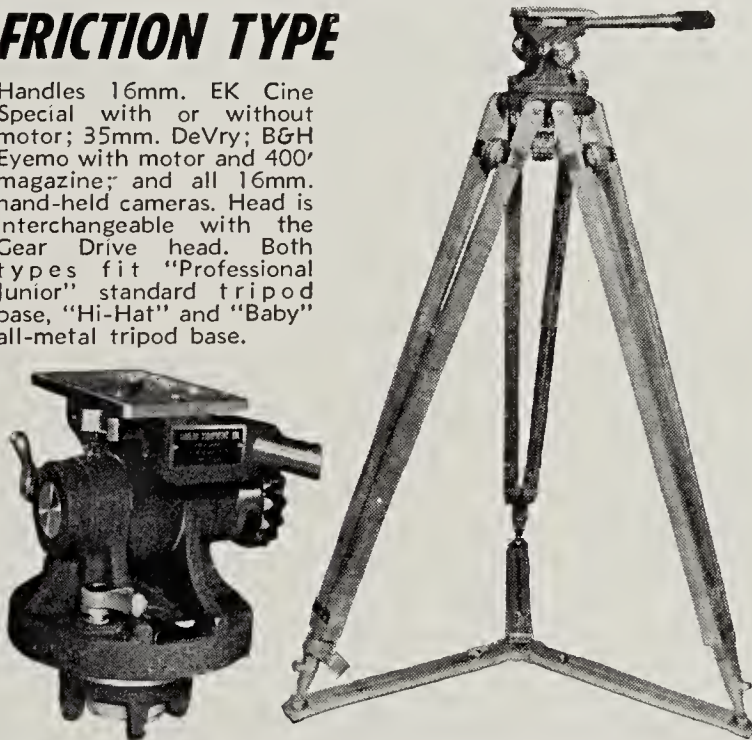
One of the most ludicrous phases of a cameraman's work is the length of time it takes him to light a setup. For a scene which takes seven minutes to shoot he may light up in 15 minutes. For a scene that takes 30 seconds it could take as long as an hour to light. Bredell is known throughout the industry as one of the speediest cameramen among the experts. This is because he uses less equipment and is what technicians call a "one source light man." He plans his action in one

# "PROFESSIONAL JUNIOR" CAMERA EQUIPMENT

Interchangeable - Removable Head Tripods

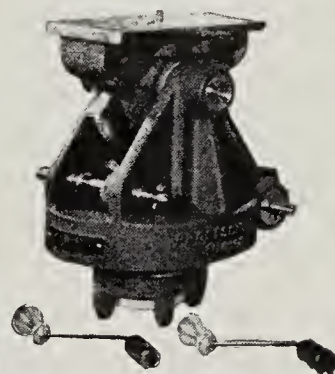
## FRICITION TYPE

Handles 16mm. EK Cine Special with or without motor; 35mm. DeVry; B&H Eyemo with motor and 400' magazine; and all 16mm. hand-held cameras. Head is interchangeable with the Gear Drive head. Both types fit "Professional Junior" standard tripod base, "Hi-Hat" and "Baby" all-metal tripod base.



## GEAR DRIVE

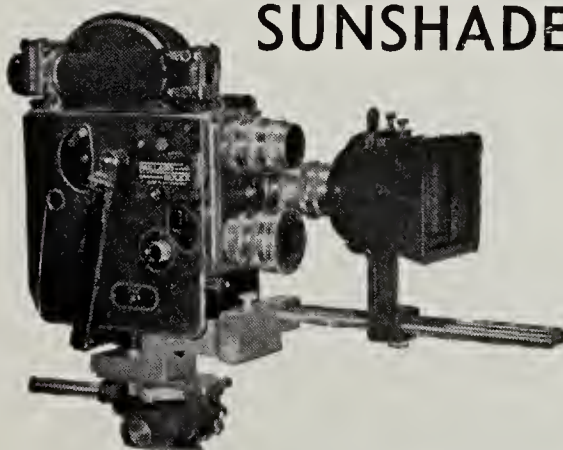
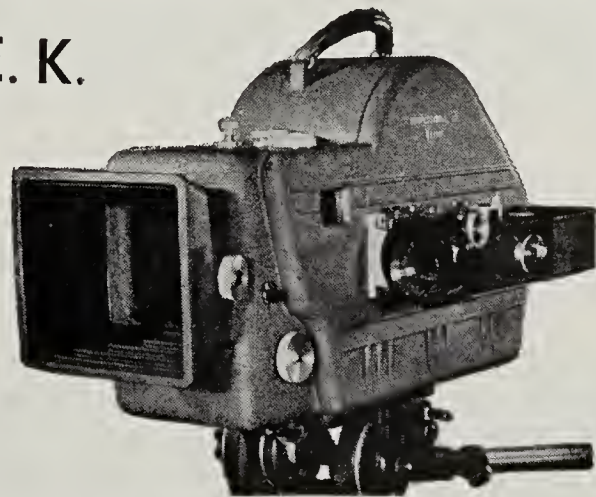
The head, made of Dow Metal magnesium, weighs but 5½ lbs. and is interchangeable with the Friction type head. It handles all types of cameras. Snap-on metal cranks control pan and tilt action from both sides. Worm-driven gears are Gov't spec. bronze.



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key spotlight and disperses his background lighting so that actors do not require their movement limits to be chalk-marked. This gives much more freedom of action and cuts down the need for repeated takes.

Woody is one of the two or three Directors of Photography who worked up from the ranks of still men. As the latter he photographed the publicity and advertising art on De Mille's "The Crusades." Then for ten years he was a camera operator, which job he performed on the first Deanna Durbin picture, "Three Smart Girls."

"I was always a camera fiend," he said, "and once I left home for a while because mother threw my dark room equipment out on the lawn when she found stains in her carpet."

Bredell is an ardent member of the school of cooperation. He believes in cameraman, director and writer sitting down long before shooting to talk the whole thing over.

"In this way," he said, "one can avoid such problems as trying to follow a script like in "Can't Help Singing," that called for Deanna to climb a mountain at sundown and sing through moonrise and sun-up the following morning all in one take."

No egotist about his work, Bredell says that the test of a good cameraman is to make the audience unconscious of the photography.

"The job," he said, "is to stay with the story and not to do a lot of fancy tricks that make the audience think only of the camera and forget the actors." ★★

## SET LIGHTING FOR 16MM. BUSINESS FILMS.

(Continued from Page 347)

Having decided the mood of the scene and the principal light source, the cameraman is ready to light his set. However, he should first be familiar with the action pattern of the sequence so that no significant bit of business will be lost through playing it in a dimly lighted area. A run-through of the action by players or stand-ins will usually give a fair idea of the dramatic demands on the lighting.

In arranging actual lighting pattern, the cameraman first sets his key-light. Just how large a unit or units he will use for key illumination will depend upon such

factors as the mood of the sequence, the brightness of the indicated source, the working aperture favored by the cameraman, and whether the picture is photographed in black and white or color. In black and white a single Baby Keg-lite may actually be sufficient to supply key-light for a low-key sequence. In color photography, however, a considerably stronger unit is required for the key-light.

Let us say, then, that the cinematographer has placed his key-light in such a way as to complement the mood, source and pattern of action within the sequence. He now must concern himself with the degree of fill-light which is to be used. The amount of fill depends upon the general key of the lighting, the mood of the scene, and the indicated source. Low-key lighting, of course, requires very little fill light, since shadows are an important adjunct. A high-key sequence, however, more or less does away with shadows in favor of sparkling brilliance. This does not imply that high-key lighting is flat—it merely calls for less contrast between key-light and fill-light. Color cinematography, generally speaking, also demands more fill-light than a black and white sequence of similar mood.

The types of units to be used for fill-light are determined by the demands of the sequence. For high-key lighting, a unit as heavy as the key-light may be used, although it should be considerably toned down with scrims and diffusers. For low-key lighting, a smaller spotlight flooded out for softness but screened down by means of barn doors or a snoot is quite acceptable. A single or double Broad makes a perfect fill-light for black & white photography, since it throws a relatively shadowless light. For color photography, the Cinelite is a more ideal unit.

Having set the key-light and the main

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fill-light, the cinematographer will next consider lighting the background. Here, some cameraman may work by meter (figuring a certain mathematical ratio between key-light and background) while others may work equally well merely by sizing up the situation by eye. But again, the relative brightness of the background will depend primarily upon the mood and general lighting key of the scene. In high-key cinematography, the background is often brighter than the key-light. In low-key lighting there is sometimes virtually no background light, or perhaps just enough to accent the contours of certain elements in the background.

Background illumination is best handled by setting up units outside the camera lines to light the background exclusively. If these units are mounted overhead and pointed downward at the background, there is less danger of conflicting shadows cluttering up the composition. In keeping with source, background illumination should appear to originate with the brightest element of the scene. For example, if there is a lamp burning in the scene, a spot of light should be thrown on the wall just in back of it to simulate the natural glow of that lamp.

Back-lighting and top-lighting give three-dimensional depth to a scene, bringing out the contours of furniture, props

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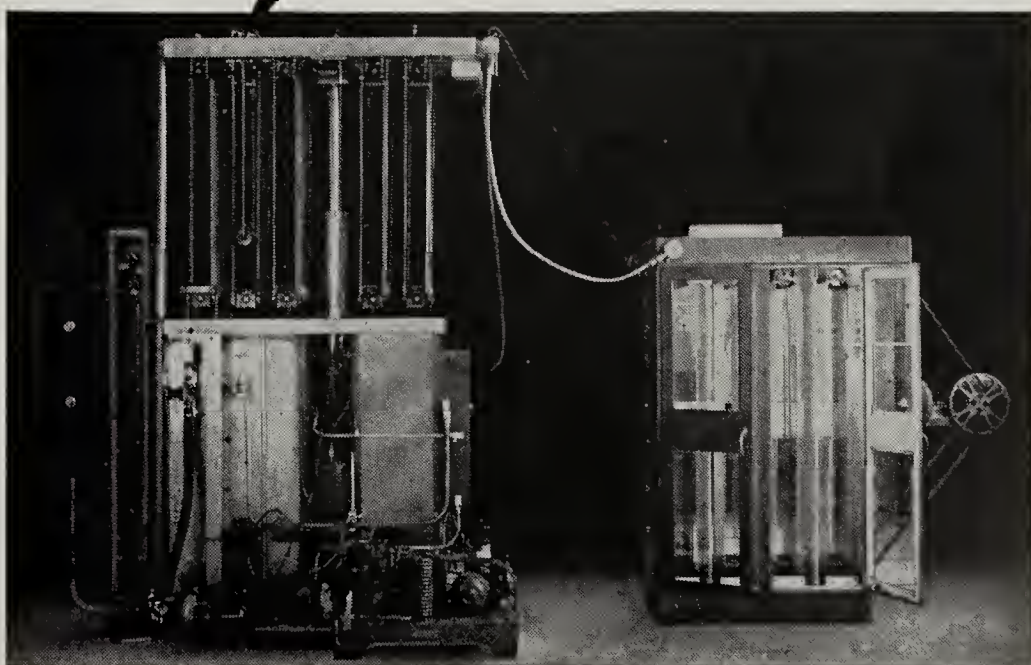
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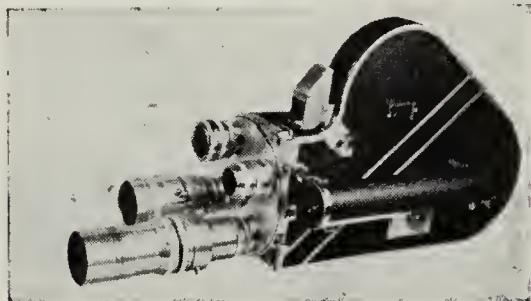
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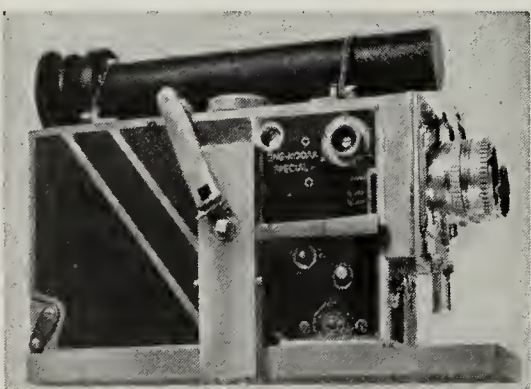
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and various textures in the decor of the set. These units, too, should be mounted overhead for the best effect.

A technique which is valuable both from the standpoint of *art* and *economy* is that of lighting just certain areas or planes of the set and allowing the rest to fall off into darkness. In such a setting, the actors move from normal lighting to cross-lighting to silhouette in a manner which can be very effective dramatically, as well as being easy on the equipment budget. However, such a lighting pattern should be carefully motivated by mood and source, and it should not be used too often.

Set lighting for 16mm. commercial films need not be elaborate or complicated. It should be remembered, however, that the movie-going public has become conditioned to the technical excellence of the entertainment photoplay, and it naturally expects a similar quality in any other type of motion picture shown publicly. Carefully chosen lighting units, a bit of originality, the exercise of great care in balancing lights will enable the commercial film producer to inject the necessary professional lighting into his films to satisfy the most critical audience.

NEXT ISSUE: 'Lighting Players on the Set.'

## DIMMER BANKS AND MODERN SET LIGHTING

(Continued from Page 337)

disconnected by a silent knife switch which, on the latest models, is dead front. Each control lever is equipped with a pointer which indicates position of dimmer plate. Levers are also equipped with an up and down silent rubber stop, and there are indicating pilot lights on both front and rear panels.

The one illustrated was designed and manufactured by the electrical department of Columbia studios and was used by the writer on his recent assignment on that lot, the filming of "The Lone Wolf and His Lady." We also used a similar dimmer bank in shooting "The Babe Ruth Story."

Despite the value of the dimmer bank as a production moneysaver, its successful use depends entirely on skill of the operator. Certain studio electricians such as Howard Robertson, at Columbia, have become specialists in operating dimmers and their services are so valued that, today, when it is proposed to use a dimmer bank on a set, invariably the first question the director of photography asks is, "Who is to be the operator of the dimmer?"

One of the most effective uses of the dimmer bank is in shooting a scene where a player or group of players are to walk from a distant position to closeup. With the key light controlled by the dimmer bank, its intensity may be diminished as the players advance toward the camera. A similar setup is shown diagrammatically in the accompanying drawing; the player at position A advances upstage and stops in front of the camera at B. The light intensity at positions A and B, coming from the fixed key light at right of camera, may vary as much as 100 per cent, were the dimmer not used; but with a dimmer bank on the set and a skillful operator at the controls, light on the player can be kept constant during his entire advance to position B.

Another great advantage of the dimmer bank is the speed by which sudden



FRONT VIEW of the latest Bardwell-McAlister ten-unit interlocking dimmer bank.

changes in lighting may be effected with a minimum expenditure of time. It frequently happens that after a scene is set and all the lights placed, the director, during a rehearsal, will decide to change the pattern of action, making it necessary to change lighting densities on certain players. Before the use of dimmer banks became common, a change of this sort called for an electrician to mount a ladder and place diffusion scrims over the one or more lighting units, or remove them, as the condition called for. With the dimmer bank controlling all lights on the set, all that need be done is alter instructions to the operator or change position of the switch lever controlling the respective unit, raising or lowering its volume of light.

The non-professional may wonder just how the dimmer bank operator knows when to raise or lower a light or bank of lights and just how much. Usually this is all planned out in advance by the director of photography and cue marks made on the panel opposite each switch lever as guide. As the camera rolls and the action progresses, the cameraman may give the dimmer operator cues by way of hand signs, calling for stopping down or raising a dimmer one or two points.

Balancing the lighting so it will remain uniform or constant between two posi-



tions on the set, such as the one diagrammed here, can be determined by exposure meter readings—taking a reading at position A as the norm, and then holding the meter on the light at position B and lowering the dimmer bank lever until the key light is reduced in intensity to conform with the reading at position A. However, the experienced director of photography usually determines his light levels by eye, basing his calculations upon long experience behind the camera. Most studio cinematographers, you know, can tell an f/2.5 or an f/5 light condition, for example, by sight. It's second nature with them.

Other uses for the dimmer bank is in controlling room lights—floor lamps, table lamps, etc.—where the action calls for a player to turn them on upon entering a room, for example. In such cases both the lighting fixtures and the set lighting cables are fed from the dimmer bank, so that the power control is instantaneous and uniform. When the player enters the room and snaps the table lamp on, the lamp and set illumination come on simultaneously. If you have ever seen a picture in which this coordination of control was not evident—the table lamp lighting a split second before the set lighting flashed on—in all probability the feat was attempted without aid of a dimmer bank.

What we have cited here in the way of examples, of course, are those which have aided the photographer in his work or in enhancing the quality of his work. But there is another side of the story, too. Dimmer banks can also account for sizeable savings in production costs by speeding up lighting of sets and in effecting lighting changes with the least possible delay between takes. Over a period of time, the savings can materially affect the credit side of the production ledger.

Nor are the savings and increased production quality, brought about by dimmer bank use, applicable only to studio film production. The industrial film producer also will find their use can effect sizeable savings and at the same time enhance the photographic quality of his films.

## JOHNNY BELINDA

(Continued from Page 339)

bedroom. Occasionally the bedroom door opens, casting a path of light down the stairs which punctuates the otherwise somber lighting key of the scene. The low angle accentuates the urgency of the action as players approach and leave the camera. This same angle is held for several minutes without becoming monotonous because there is a constantly changing pattern of light and action within the scene.

Ted McCord and his operator, Elly Fredericks, rate congratulations, not only

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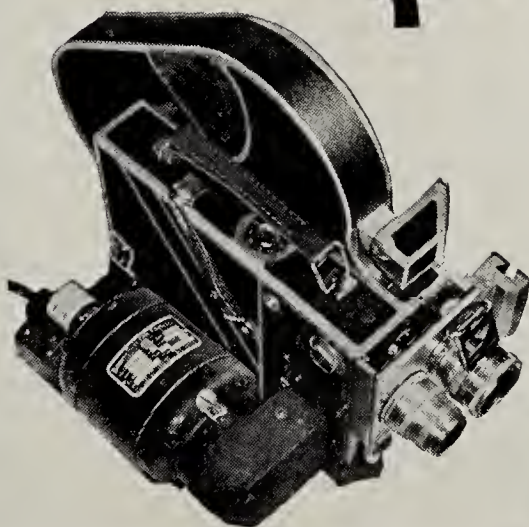
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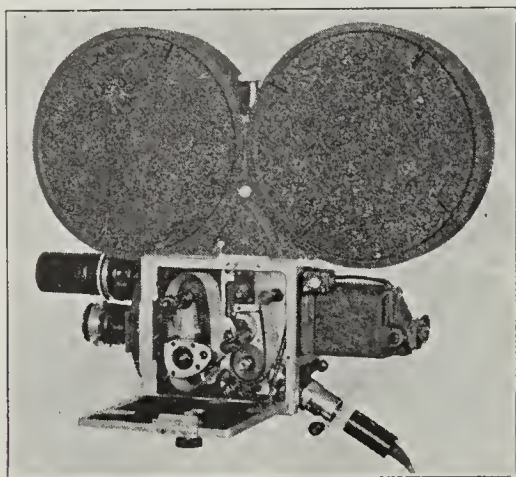
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for the artistic job of cinematography they have contributed to "Johnny Belinda," but also because they have kicked over some fairly rigid traces to try for effects which the books say can't be done.

"It was a great experience working with director Jean Negulesco," McCord observes. "An artist, he has an uncommon camera sense possessed by very few directors. He is also one of the most 'fluid' directors I've ever worked with. By that I mean he has no set pattern for approaching a scene. He's always receptive to suggestions and ready to try new ideas of camera approach."

Asked what he considers to be the typ-

ical characteristics of his camera style, McCord seemed somewhat puzzled. "Style?" he asked, "Well, I really have no definite style. It varies according to the mood of each separate picture. If there's any one thing that is characteristic I'd say it's a continuous search for new and original approaches in filming. I like to try for unusual effects, even if it means breaking all the rules of standard photographic technique. I often film a sequence in a manner that is exactly opposite to the way the books say it should be done—and the result is usually a fresh and different way of presenting a dramatic idea to the audience."

## COLOR IS HIS FORTE

(Continued from Page 343)

Swedish American steamship line and other Scandinavian interests proposed that he go abroad to produce these films as a means of interesting Americans in traveling in Europe, and to the Viking countries in particular.

So Comstedt, accompanied by Dorothy Hane, a young American script writer, as his assistant, arrived in Sweden in June, 1947—his first trip back to his native land in eight years. The Comstedt filming expedition covered some 12,000 miles by station wagon. Then, in order to shoot mining activities and topographical scenes at Kiruna, Lapland, Comstedt and his girl Friday traveled much of the way over a single track railway that links Kiruna with Narvik, riding a "Toonerville Trolley" sort of contraption that had seen better days as a model T Ford sedan. It had been adapted to the railway by replacing the rubber tired wheels with conventional flanged car wheels.

On this conveyance Comstedt and his companion encountered some hair-raising experiences.. Photography was accomplished along this hazardous route by leaping off the the car, grabbing a few well-chosen shots, then hopping back on again, with the car just managing to reach the next railroad siding ahead of an ore express train.

Early this year, while temporarily deprived of the services of Miss Hane, who had to complete scripts for other pictures on schedule, Comstedt spent a month in Lapland above the Arctic Circle, making a 16mm. color picture on native winter sports. Lapland is familiar ground to Comstedt, who had traveled there on location for earlier pictures. And besides, skiing is his favorite sport. But he encountered unusually bad weather on this trip and during a thirty day period, the sun shone on but five. On the rare occasions when the sun did make an appearance, he made every moment count with his camera, despite below-zero weather.

In shooting the skiing sequences, Comstedt frequently used his zoom lenses; and when these did not suffice for some unusual cinematic effect, he contrived new ways to get the shots he wanted. Carrying both his Cine Special and his Arriflex cameras, he would balance himself on a native dog-drawn pulka, a narrow low sled, for a travel shot, or shoot from the shoulder with his camera while zooming over the Arctic snows on skis.

Almost all of Comstedt's filming during the past ten years has been in color. His love for color photography probably stems from events in his early boyhood that ultimately led him to cinematography as a career. He was only eight years old when one day, digging among some old trunks in his grandfather's attic, he found an old magic lantern and a box of hand colored slides. The lantern's light source was a candle, which failed to satisfy Comstedt's desire for a brighter image on his bed sheet screen, so he rigged up an electric light bulb to replace the candle and soon after was giving magic lantern shows in his home to friends who paid a cent each for admission.

A few years later, a friend gave him a reel of 35mm. film. It was a slightly worn Chaplin comedy, but no good to Comstedt without the means to project it. He soon rounded up parts of old toy projectors and some electrical apparatus, and with the old magic lantern as a basis, soon had a workable homemade 35mm. projector.

When Comstedt grew a little older, he was persuaded to enter the Swedish Royal Artillery Academy and become a career officer, but the strict regimentation of military life soon changed his mind and he enrolled in the Royal Institute of Technology, in Stockholm, and there began a course of study which ultimately led him directly toward his present work. His tutor at the Institute was Prof. John Hertzberg, eminent photographic expert. Here at the Institute he was reunited with



an old friend, Carl-Johan Nilsson, a former medical student, and now a specialist in mathematics, physics and chemistry and a still photographer of note. It was Nilsson, Comstedt says, who gave him his fundamental grounding in photography.

In 1935, Comstedt secured a position with Ireilm, then one of the leading producers of feature films in Sweden. His schooling at the Institute soon began to pay off as he quickly attracted the attention and respect of his colleagues. Comstedt's first real motion picture production began here. While employed as an assistant cameraman at Ireilm, he would load a movie camera with short ends of film and set out on his bicycle on his lunch hour each day and shoot movies. Much of these were filter tests and compositional studies to benefit his pursuit of cinematography and often the films were not developed until months later. But one day he decided to see the results of his camera work and put the film through the laboratory. When the results were screened in the lab's projection room, they attracted more than usual attention, and someone quickly got word to a company official that their young up-and-coming employee really had something. Ireilm's president told him to cut and edit the film and make it ready for showing as a possible theatrical release.

The editing job completed, a dupe print was ordered rushed through the lab. A couple of hours before the print was to be delivered to a local theatre, Comstedt discovered that it had been printed too dark. He rushed the print back to the lab where he and a friend personally sweated over a remake and had it ready barely five minutes before it was to go on the screen.

The success of this spare-time production led to his promotion as chief cinematographer for Ireilm. But Comstedt had grave doubts about undertaking so responsible a position. He consulted his old friend Nilsson who not only encouraged him to take the job but offered to come to work as his assistant. Together, Comstedt and Nilsson filmed many feature films and pioneered many technical experiments which have been credited with advancing the Swedish film industry.

Having acquired long ago two of the most important zoom lenses ever made, Comstedt naturally has put them to exhaustive tests. The zoom lens for his 35mm. camera, valued at \$12,000, is the only one of its kind in existence. Its maximum aperture is f/2, which is rare in a lens of this type, and gives perfect definition at any opening with none of the aberrations characteristic of the average zoom lens. It has a focal length working range from 32mm. to 75mm. The zoom lens for his 16mm. camera possesses the same unexcelled character-

(Continued on Page 360)

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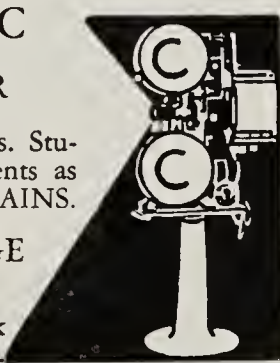
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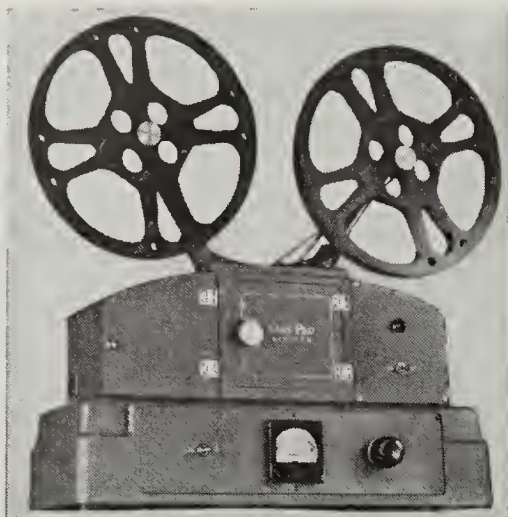
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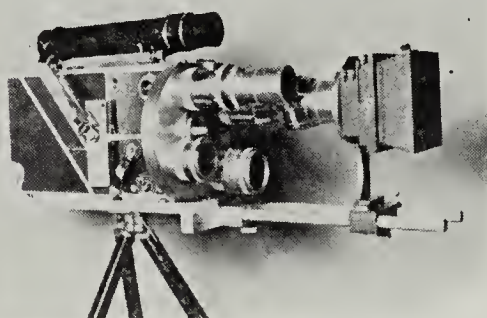
### BACK ISSUES

of The American Cinematographer are available for most months of 1947 and 1948. Many earlier issues also available. All contain valuable technical articles and information relative to contemporary motion picture photography. The December issues contain an annual index as a guide to content of each year's 12 issues. Price of back issues: In U. S., 30c; Foreign, 40c.

**THE AMERICAN CINEMATOGRAHER**  
1782 N. Orange Dr., Hollywood 28, Calif.

# WHAT'S NEW

## in equipment, accessories, service



### 4-Lens Cine Special Turret

Arthur H. Hart, 2125 Thirty-second Ave., San Francisco, is supplying an attractive precision-made four lens turret for the Cine Special that incorporates "C" mounts for lenses. Any lens may be swung into taking position in an instant. There is no interference between lenses in the field of view, and the turret affords use of a wide range of lenses from 15mm. up to 152mm. The camera pictured shows the turret mounted with a Kodak 15mm. f/2.7, a 25mm. f/1.4 Ektar, a 63mm. f/2.7 and a 152mm. f/4.5 lenses.

Arthur Hart has been associated with the development of custom-built camera and electronic devices for over ten years. He markets the turret exclusively and interested readers are invited to write him for further particulars and prices.



### Incident Light Reader

The Western Electrical Instrument Corporation is now offering a simple light adapter, known as the Weston Invercone, to present owners and new purchasers of Weston Master Universal Exposure Meters. With this small auxiliary device, user of a Weston can readily convert his meter for incident light where that method may be preferred, without sacrificing the many basic advantages of the reflected light method required for the bulk of his shooting. The Invercone can be used with all Weston Master Universal Exposure Meters.

The Invercone is quickly snapped into place over the photocell of the meter (as shown in the illustration) and can be used with both the high-light and low-light scales. Camera settings are selected from the exposure guide dial in the usual manner. The Invercone will be available through all photo dealers. The price is \$3.

### "C" Mounts

National Cine Equipment, Inc., 20 West 22nd St., New York City, is presently mounting Bausch & Lomb Baltar lenses in "C" mounts for Cine Special, Maurer, Filmo, Aurcion and other makes of 16mm. cameras. The Baltar lenses are available in the following focal lengths: 15mm., 17.5mm., 20mm., 25mm., 30mm., 35mm., 40mm., 50mm., 75mm., 100mm., and 152mm. These are said to be the same lenses used by the major studios and are being adapted to the needs of 16mm. cinematographers and producers requiring high quality lenses for exacting work.

### Reeves Lamp Available

Art Reeves, 1515 N. Cahuenga Blvd., Hollywood 28, Calif., announces that he is again manufacturing the popular "Lin-O-Lite" recording glow lamps. Reeves also manufactures the "Sensitester" which is especially adapted to modern fine grain films.

### COLOR IS HIS FORTE

(Continued from Page 359)

istics. Having a maximum aperture of f/2.3, its focal length range is 25mm. to 80mm. While in the United States, Comstedt is setting up a plan whereby these lenses will be made available to cinematographers and producers on a lease basis.

Olle Comstedt, A.S.C., is the sixteenth and latest non-resident member to be admitted to the American Society of Cinematographers. He is associated with Films For Industry, Inc., New York and he controls, along with Sven Thermaenius, noted producer and cinematographer, the International Color Film Productions, Ltd., of Stockholm. Comstedt really specializes in interior color photography. Here, he feels both the lighting and composition can be perfectly controlled. While his chief interest will always remain in the field of feature films, his main efforts these days are directed toward the production of documentary films in color.



## THERE'S GOLD IN 16MM., TOO!

(Continued from Page 342)

side of a factory which manufactured fishing equipment. I was never conscious of any so-called advertising plugs. Glen's job has turned out so well that school boards and educational centers are asking for prints of the picture."

The biological sequence of "Forever Angler" has been acclaimed by noted biologists to be the finest thing of the kind ever to be put on film. The life sequence of the trout, starting with the stripping of the female, fertilizing the eggs and following with microscopic shots showing process of sperm entering the egg, and on through each stage of development from embryo to maturity, is an artistic masterpiece. The color is magnificent, showing the blood stream, the heart beating and the various organs developing.

The microscopic shots presented many difficulties and called for Glen's keenest technical skill, patience and ingenuity. This sequence, which was in work 28 days, was made possible by the generous cooperation of Robert C. Lewis, Assistant Supervisor at the Hot Creek Hatcheries, near Bishop, California, Allan Taft, Chief of the Fish & Game Commission at Sacramento, and the personnel of the State Fish Hatchery at Fillmore, California.

Much of the four-week period spent in shooting the biological sequence was consumed in making tests and experiments. It was impossible to make such shots based on exposure meter calculations; nor are there any predetermined exposure data available in textbooks which would aid a photographer to set his lens in making microscopic shots of this kind. So Glen solved the problem of exposure, focus, and etc., through trial and error. Test shots were made, rushed to the laboratory for processing, then screened for study. In the end, the sequence of shots which highlights this informative color film were made as follows:

The problem was to secure highly magnified shots of the actual development of trout embryo from the newly hatched egg to the full fledged trout minnow. Because the eggs and the embryo are translucent, much interest lies in watching the development of the embryo's blood stream, and its head and facial features. To capture this on film it was necessary to provide delicate but ample lighting from the rear. A very simple arrangement enabled this to be done with success.

The Cine Special camera was mounted vertically and fitted with a telephoto lens. The eggs, and later the developing embryos, were placed with a small quantity of water into a glass tumbler resting on a sheet of glass. Then the camera was lowered toward the tumbler until the telephoto lens, entering the glass, was

within a fraction of an inch of the water. The necessary illumination was provided by reflecting light from a photoflood lamp onto a light blue card and thence toward bottom of the tumbler. Two electric fans blowing cool vapors from chunks of dry ice upon the tumbler kept the more virile of the embryos from dying and thus enabled Glen to photograph them. The eggs and the embryos are extremely delicate and many died the moment they were transferred from the hatchery tank to the tumbler before the camera. In addition to the exhaustive test shots which determined correct focus and exposure, it was necessary to remake several shots as many as four times, because of fatalities suffered by the subjects. The action in all shots of the biological sequence was filmed at standard sound speed.

When questioned concerning his transition from 35mm. film to 16mm. film, Glen had some very definite ideas. He claims that 16mm. film has too long been identified with amateurs, pegged with such minimizing titles as "substandard," "minifilm" and "narrow gauge," and says, "I am still waiting to meet anyone who can show me the difference between the responsibilities of a professional cameraman who uses 16mm. film and one who uses 35mm.—or any other size."

"Forever Angler" was nine months in the making, because of the different seasons of the various fishing sequences, and the picture takes one through practically every type of fishing—catfish, trout, and bass; fishing from surf and pier, and on up to swordfishing. Besides, the fish actors didn't always do what the director wanted them to. It took patience and time—waiting until the right shot came up. Shooting the marlin sequence alone consumed ten days.

Glen says he has no intention of going into mass production of commercial and educational films. Using the same Cine Special and the Maurer 16mm. sound camera with which he photographed this production, he plans to make no more than two or three pictures a year, each to be unique in its respective field.

## BULLETIN BOARD

(Continued from Page 332)

to the motion picture industry on which reports and demonstrations will be presented at the convention.

**IN MEMORIAM**—William H. Dietz, A.S.C., died recently in Seattle, Washington, according to advice received from his wife. An active A.S.C. member at time of his death, he was formerly a well-known cinematographer in the Hollywood studios.

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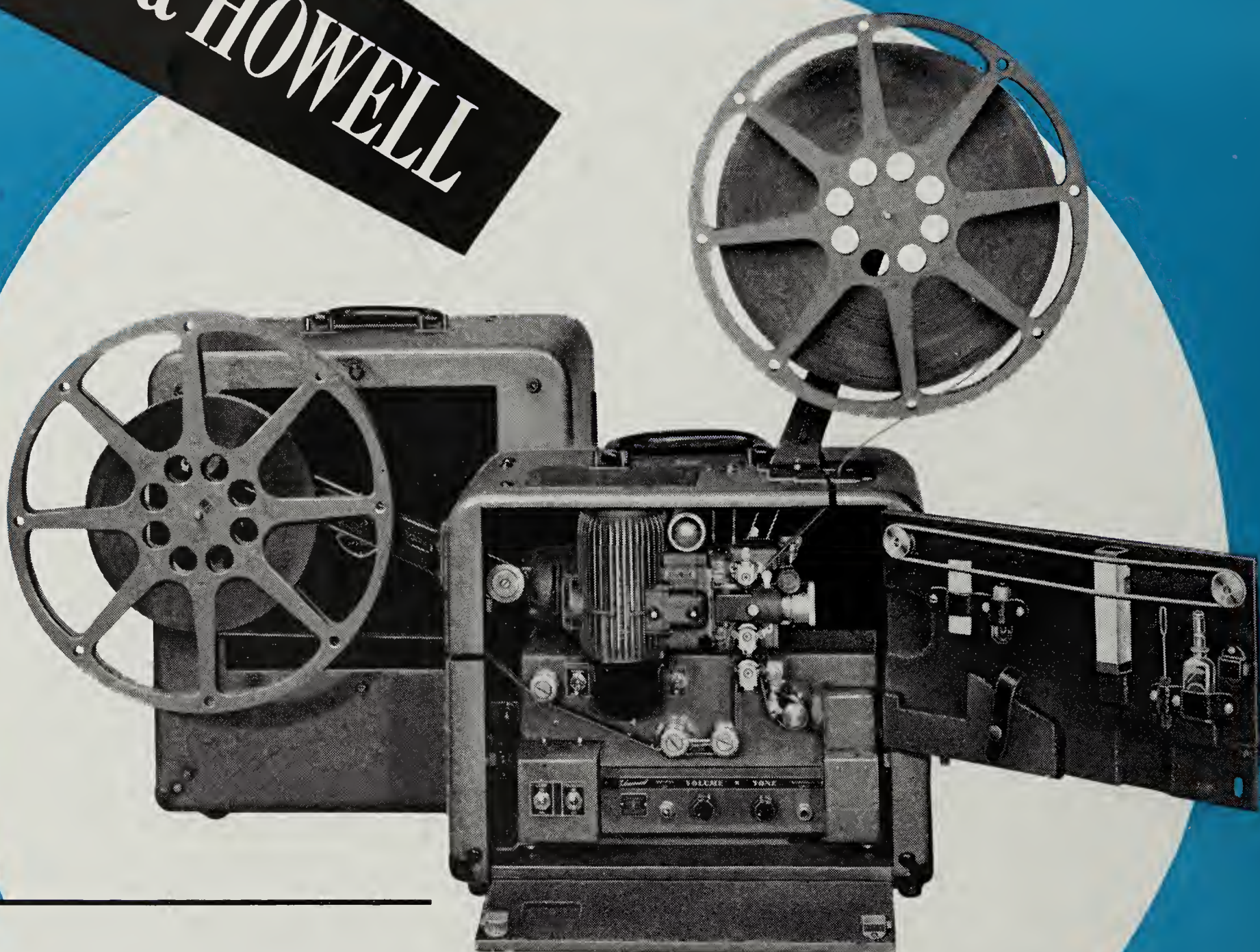
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# Cinematographer



THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

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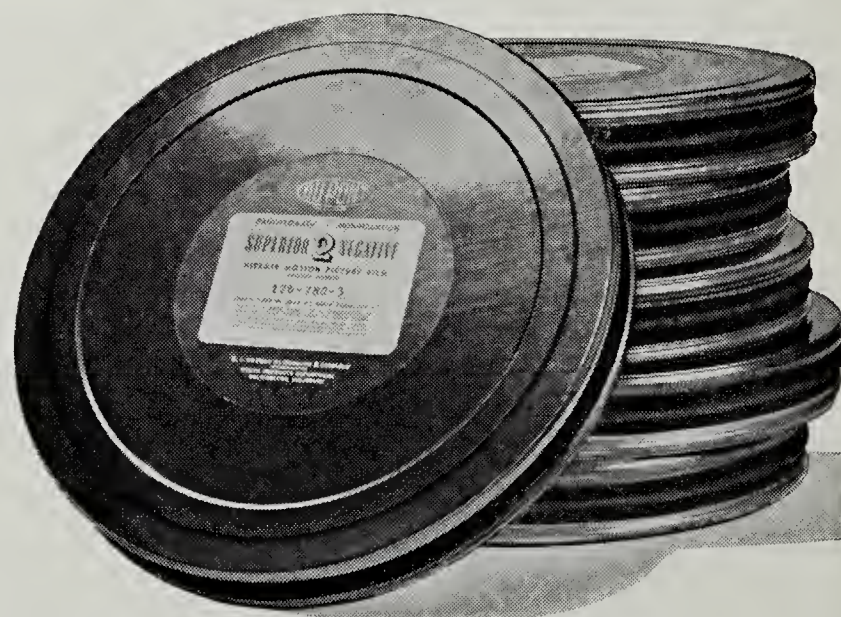


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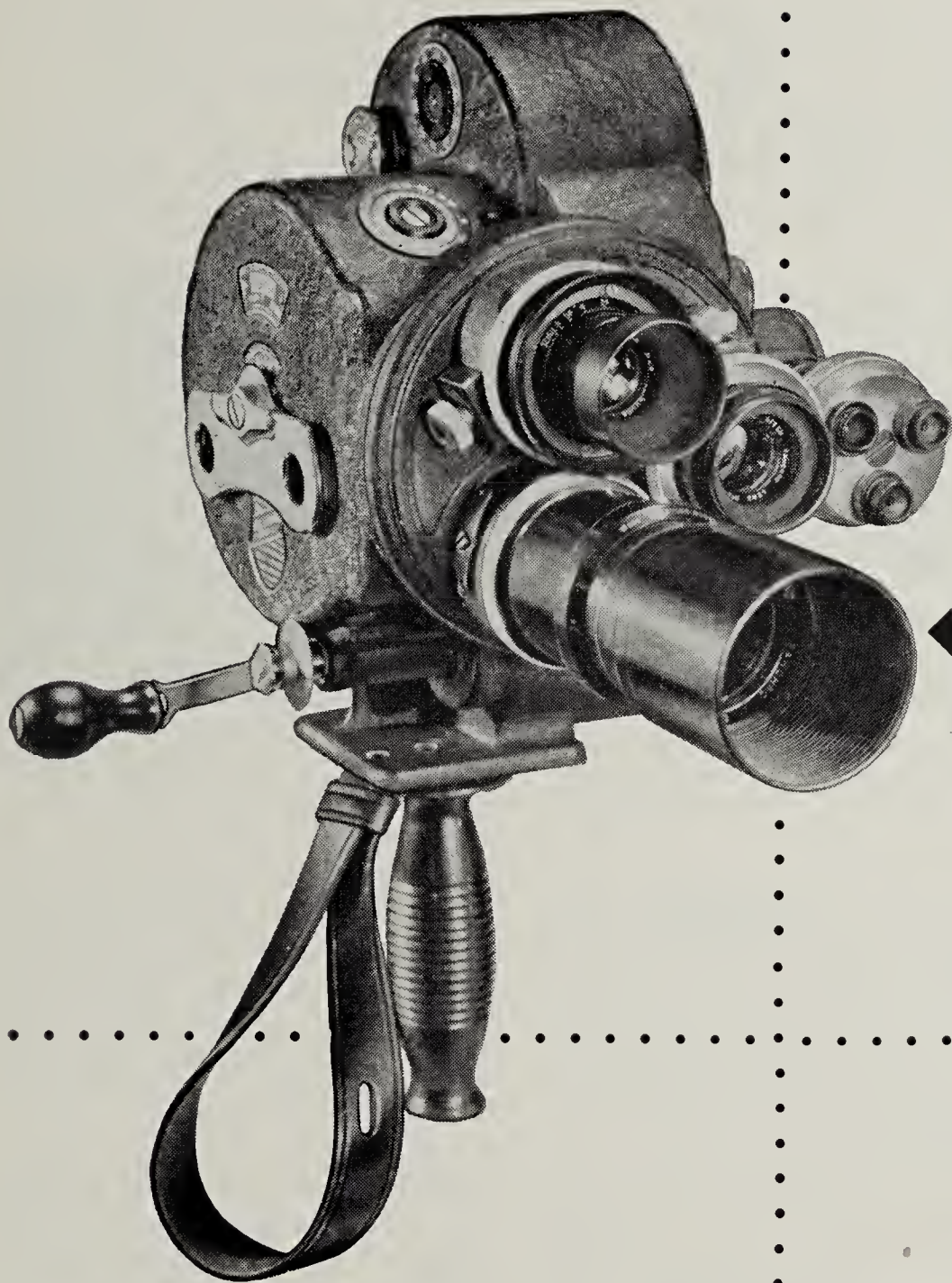


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◀ **Eyemo Model M** (pictured) has a compact, three-lens turret head. Finder is matched to the lens in use by turning the finder objective turret. Like all current Eyemo models, Model M has a speed range of 8 to 48 frames per second, a hand crank, and a positive-type viewfinder.

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# Hollywood Bulletin Board



CINECOLOR CORPORATION hosted members of the A.S.C. at its plant in Burbank October 4th with a buffet supper and demonstration of latest Cinecolor films. Photo, above left, shows guests gathered about bar and buffet. At right, Cinecolor's Board Chairman A. Pam Blumenthal (seated) hosts A.S.C.'s Officers and Board Of Governors in advance of the meeting.

JOHN BOYLE, A.S.C. and Elmer Dyer, A.S.C., were both victims of thieves the past month. Boyle suffered loss of a Filmosound projector from his son's car parked in front of a Hollywood hotel the night of October 15th. Readers in shopping for sound projectors, are asked to be on alert for a model 170 Filmosound, serial 466018.

Dyer's car, also parked in front of a hotel—the St. Francis in San Francisco—was broken open and his 71-Q Eyemo with full complement of lenses stolen along with Dyer's entire wardrobe. Eyemo is a spider-turret model, serial 388415. Missing lenses are: 6" f/4.5 Telekinic (Cooke), 4" f/2.5 coated Cooke lens, 35mm. f/3.5 Zeiss, 2" coated Kinar and a f/2.3 Baltar.



KARL FREUND, A.S.C., (left) presents Olle Comstedt, A.S.C., with first Spectra color meter off assembly line. In return Comstedt presented Freund with native Laplander's hat, souvenir of Comstedt's recent filming assignment in Lapland.

TELEVISION Zoomar Corp. Company, a new organization which recently filed incorporation papers in New York, will handle manufacture and sale of Zoomar television and motion picture camera lenses. President of company is Jerry Fairbanks. Jack Pegler is secretary and Dr. Frank G. Bach, treasurer.

DOCUMENTARY and television cameramen in New York have banded together to form a union, to be known as the Association of Documentary and Television Cameramen. Membership is open to all employed motion picture cameramen, assistants and helpers. Among the members are Robert Flaherty, honorary president; Roger Barlow, John Ferno, Alex Hammid, Jules Bucher, Lawrence Madison, Victor Solor and Al Mozell.

A COMMITTEE of A.S.C. members recently were given demonstration of a new television camera being introduced and marketed by Remington Rand, Inc., manufacturers of business machines. Camera,

(Continued on Page 397)

### NOTICE TO SUBSCRIBERS

Effective with the January, 1949, issue the yearly subscription rate of the AMERICAN CINEMATOGRAPHER will be increased from \$2.50 to \$3.00 for U. S., Canada and the Pan-American Union; \$4 foreign. This is the first time in magazine's 29 years of existence that subscription rate has been increased, but spiraling production costs finally has made this slight increase necessary. The single copy rate of 25 cents remains unchanged.

—Editor.



# ... art in lights and shadows

IT WOULD be impossible to apportion credit, in exactly the right amounts, to all individuals having a hand in the creation of a good picture. There is enough inner satisfaction in the happy result to go around.

Yet, it has always seemed to me that the men behind the cameras—the cinematographers—have never quite received their full share of credit from those outside the industry. They seem to be taken for granted by the public—a necessary appendage in this highly-publicized industry. But the facts are quite otherwise. The cinemato-graphers have made immense and vital contributions to this most democratic of all art forms.

Actually, of course the history of motion pictures has been inseparably bound to the progress of photography. The ideas we conceive, the effects so painfully sought, have but one purpose—to be seen and recorded through the small lens of the motion picture camera. It is therefore imperative that the man behind the camera be more than a mere artisan. He must be a creative artist dealing in lights and shadows and moods. The camera, through constant improvement, has become a fine and delicate instrument. But even more important, I believe, have been the insight and the pioneering spirit of men who handle this instrument and who have helped bring it to its present stage of perfection.

—Darryl F. Zanuck,  
25th Anniversary of A. S. C.



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THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

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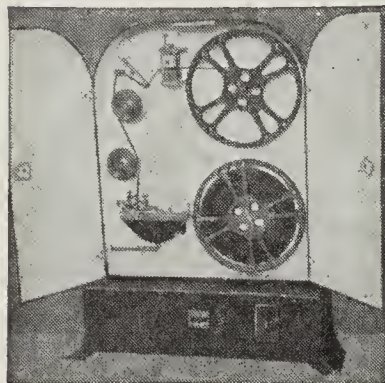
PEVERELL MARLEY, A. S. C., (second man from left, standing) stops the camera while director David Butler and star June Haver discuss a scene for Warner Brothers' Technicolor musical, "Silver Lining." The crew, too, takes a keen interest in the problem at hand.—Photo by Jack Woods.

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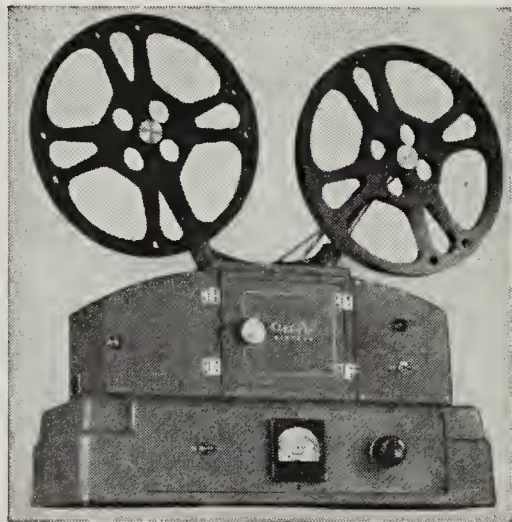
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## Current Assignments of A.S.C. Members



Major film productions on which members of the American Society of Cinematographers were engaged as directors of photography during the past month.

### Allied Artists

• HARRY NEUMANN, "Stampede," with Rod Cameron, Gail Storm, Johnny Mack Brown. Lesley Selander, director.

• CARL STRUSS, "Bad Boy," with Lloyd Nolan, Jane Wyatt, James Gleason. Kurt Neuman, director.

• JACK MACKENZIE, "When A Man's A Man," (Windsor Prod.) with Guy Madison, Rory Calhoun and Cathy Downs. John Rawlins, director.

### Columbia

• RUSSELL METTY, "Rough Sketch," (Horizon-Col.) with Jennifer Jones and John Garfield. John Huston, director.

• REX WIMPY, "Laramie," with Charles Starrett and Smiley Burnett. Ray Nazarro, director.

• CHARLES LAWTON, "The Doolin Gang," (subsequently changed to "Wild Bill Doolin"), with Randolph Scott, George MacReady and John Ireland. Gordon Douglas, director.

• VINCENT FARRAR, "Blondie Hits the Jack Pot," with Penny Singleton, Arthur Lake, et al. Ed Bernds, director.

• ARCHIE STOUT, "Bonanza!" with Glenn Ford, Ida Lupino and Edgar Buchanan. George Marshall, director.

• HENRY FREULICH, "The Devil's Henchmen," with Warner Baxter and Mary Beth Hughes. Seymour Friedman, director.

### Independent

• JOHN ALTON, "Reign of Terror," (Walter Wanger) with Robert Cummings and Arlene Dahl. Anthony Mann, director.

• JACK GREENHALGH, "File 649, State Department," (Neufeld-Film Classics) with Virginia Bruce and William Lundigan. Peter Stewart, director.

• JAMES BROWN, JR., "Zamba," (Fortune Films) with Jon Hall and June Vincent. Nate Watt, director.

• STANLEY CORTEZ, "The Man on the Eiffel Tower," (Allen & Tone) (Shooting in Paris on Ansco Color) with Charles Laughton, Franchot Tone, Burgess Meredith, et al. Irving Allen, director.

• MARCEL LEPICARD, "Alaska Patrol," (Burwood-Film Classics) with Richard Travis and Helen Westcott. Jack Bernhard, director.

• GILBERT WARRENTON, "Ride, Ryder Ride!" (Equity) with Jim Bannon and Peggy Stewart. Lew Collins, director.

• JACKSON ROSE, "Triple Cross," (Belsam-20th) with Tom Conway and Barbara Billingsley. Edward Cahn, director.

• LEE GARMES, "Roseanna McCoy," (Goldwyn-RKO) with Farley Granger and Joan Evans. Irving Reis, director.

### M-G-M

• HARRY STRADLING, "Barkleys of Broadway," (Technicolor) with Fred Astair, Ginger Rogers and Oscar Levant. Charles Walters, director.

• ROBERT SURTEES, "Big Jack Horner," (subsequently changed to "Big Jack") with Wallace Beery and Marjorie Main. Richard Thorpe, director.

• GEORGE FOLSEY, "The Great Sinner," with Gregory Peck and Ava Gardner. Robert Siodmak, director.

• RAY JUNE, "The Secret Garden," with Margaret O'Brien and Dean Stockwell. Fred M. Wilcox, director.

• HAL ROSSON, "The Stratton Story," with James Stewart and June Allyson. Sam Wood, director.

### Monogram

• HARRY C. NEUMANN, "Hidden Danger," with Johnny Mack Brown, Raymond Hatton and Christine Larson. Ray Taylor, director.

• WILLIAM A. SICKNER, "Charlie Chan, In Mexico," with Roland Winters, Keye Luke, Beverly Johns, et al. William Beaudine, director.

• WILLIAM SICKNER, "Bomba, the Jungle Boy," with John Sheffield and Peggy Ann Garner. Ford Beebe, director.

### Paramount

• DANIEL FAPP, "A Mask For Lucretia," with Paulette Goddard, John Lund and MacDonald Carey. Mitchel Leisen, director.

• GEORGE BARNES, "Samson & Delilah," (Technicolor) with Hedy Lamarr and Victor Mature. Cecil B. DeMille, director.

• LEO TOVER, "Bitter Victory," (Hal Wallis) with Robert Cummings, Elizabeth Scott and Diana Lynn. William Dieterle, director.

### R-K-O

• ROBERT DEGRASSE, "The Clay Pigeon," with Bill Williams and Barbara Hale. Richard Fleischer, director.

• MILTON KRASNER, "The Set Up," with Robert Ryan and Audrey Totter. Robert Wise, director.

• NICHOLAS MUSURACA, "Stagecoach Kid," with Tim Holt and Jeff Donnell. Lew Landers, director.

### 20th Century-Fox

• JOE MACDONALD, "Down To The Sea In Ships," with Richard Widmark, Cecil Kellaway and Dean Stockwell. Henry Hathaway, director.

• LEON SHAMROY, "Prince Of Foxes," (Shooting in Italy) with Tyrone Power, Orson Welles and Wanda Hendrix.

• HARRY JACKSON, "The Beautiful Blonde From Bashful Bend," (Technicolor) with Betty Grable and Cesar Romero. Preston Sturges, director.

• RUSSELL HARLAN, "I Was A Male War Bride," (Shooting In Germany) with Cary Grant and Ann Sheridan. Howard Hawks, director.

### United Artists

• WILLIAM MELLOR, "Too Late For Tears," (Hunt Stromberg Prod.) with Elizabeth Scott, Dan Duryea and Don DeFore. Byron Haskin, director.

• ERNEST LASZLO, "Impact," (Popkin-U-A) with Brian Donlevy and Ella Raines. Arthur Lubin, director.

### Universal-International

• MAURY GERTSMAN, "The Amboy Dukes," with Peter Fernandez, Barbara Whiting, et al. Maxwell Shane, director.

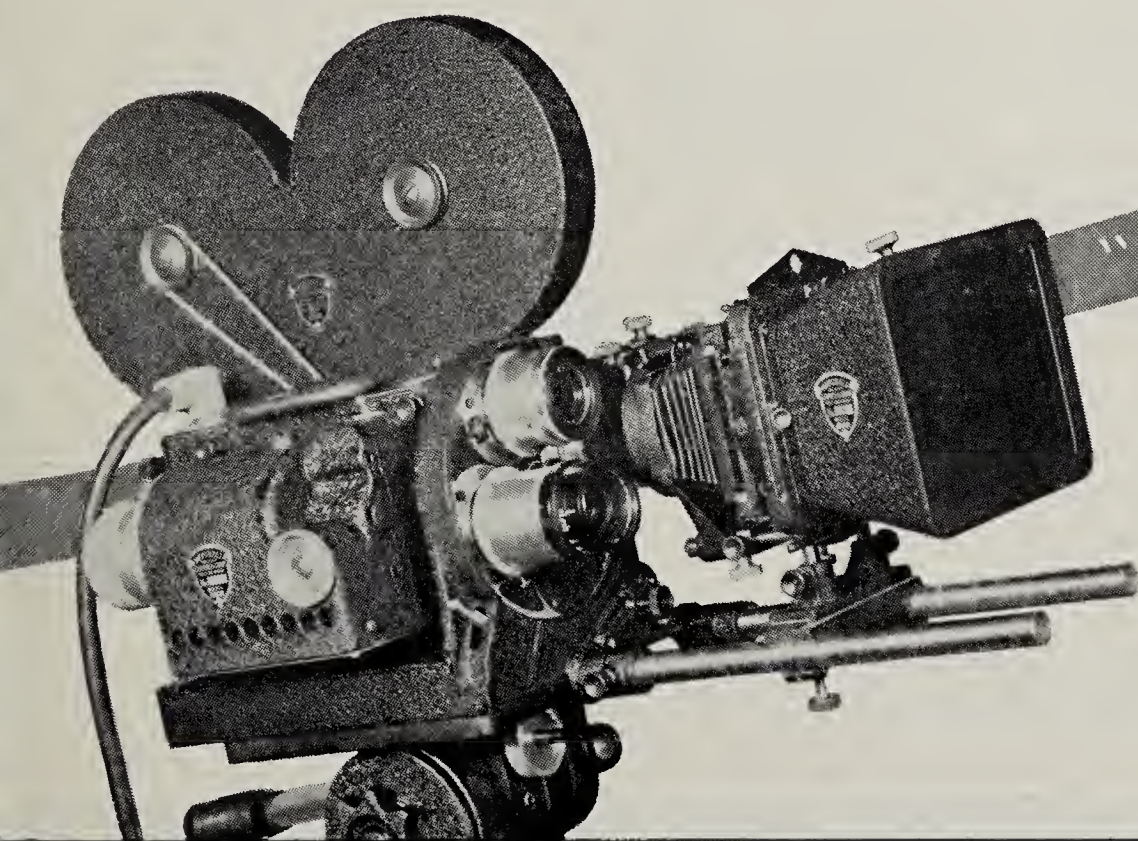
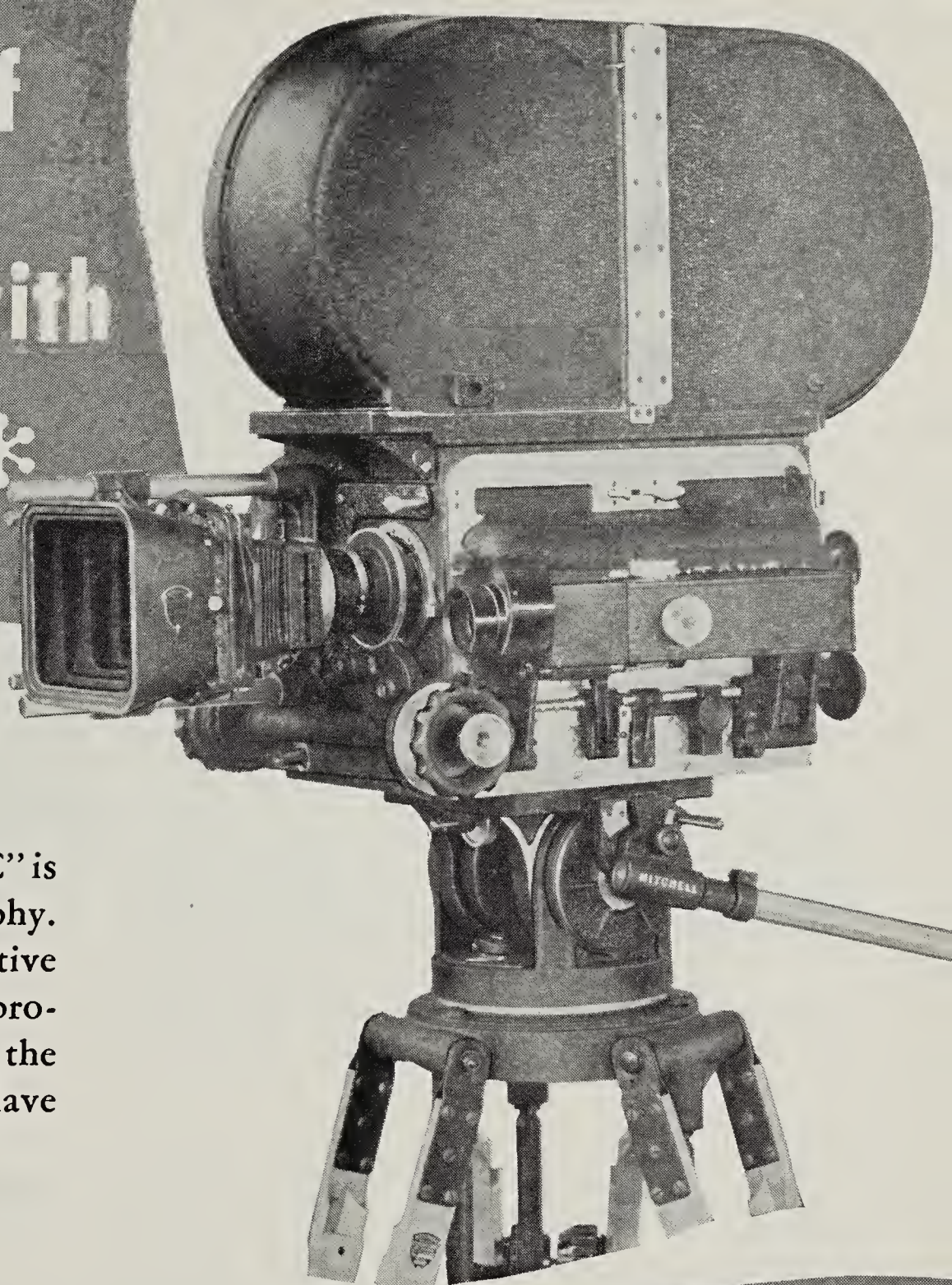
• WILLIAM DANIELS, "The Life Of Riley," (Brecher Prods.) with William Bendix and Rosemary DeCamp. Irving Brecher, director.

(Continued on Page 398)



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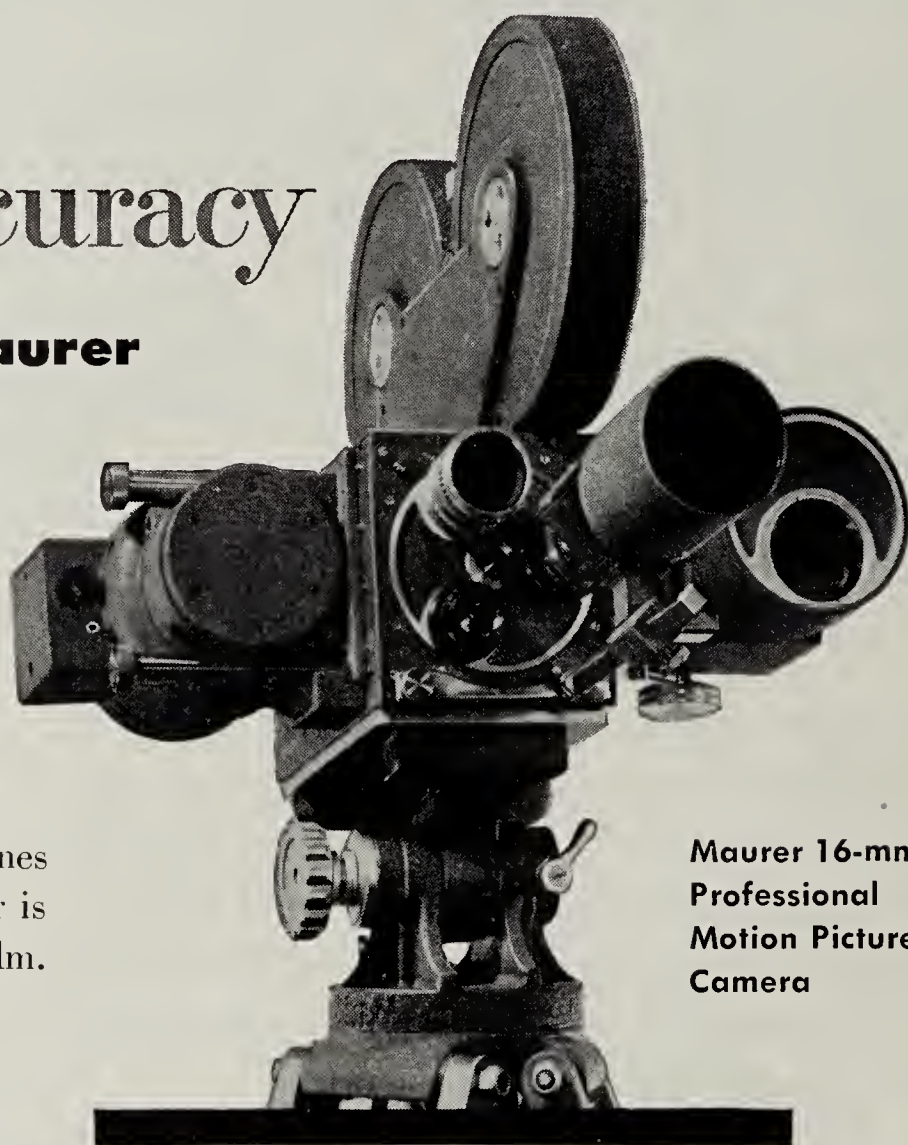


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JOHN BOYLE, A.S.C., recently completed photography in Cinecolor on the Eagle-Lion production, "Northwest Stampede," starring James Craig. Boyle probably has more experience with Cinecolor than any other director of photography, was the first to advocate hard lighting for this process.



FRED JACKMAN, JR., A.S.C., has the distinction of being the first director of photography to use the new latensified Cinecolor film on the Nat Holt production, "Canadian Pacific." Jackman, along with John Boyle, is a Cinecolor cameraman of long experience.

# Cinecolor Moves Ahead

**Improved laboratory procedures enable Cinecolor to be shot with less light, effecting sharp economies in the production of color films.**

By NORMAN KEANE

**A** NEW TYPE of photographic specialist is developing in Hollywood. He is the Cinecolor cameraman. He has been an important factor in the recent development of Cinecolor to a medium second only to Technicolor in the color field. Through careful study and continued use of the Cinecolor cameras, these men have greatly aided Cinecolor technicians to bring about the great improvements that we see today in the Cinecolor releases screened in the nation's theatres.

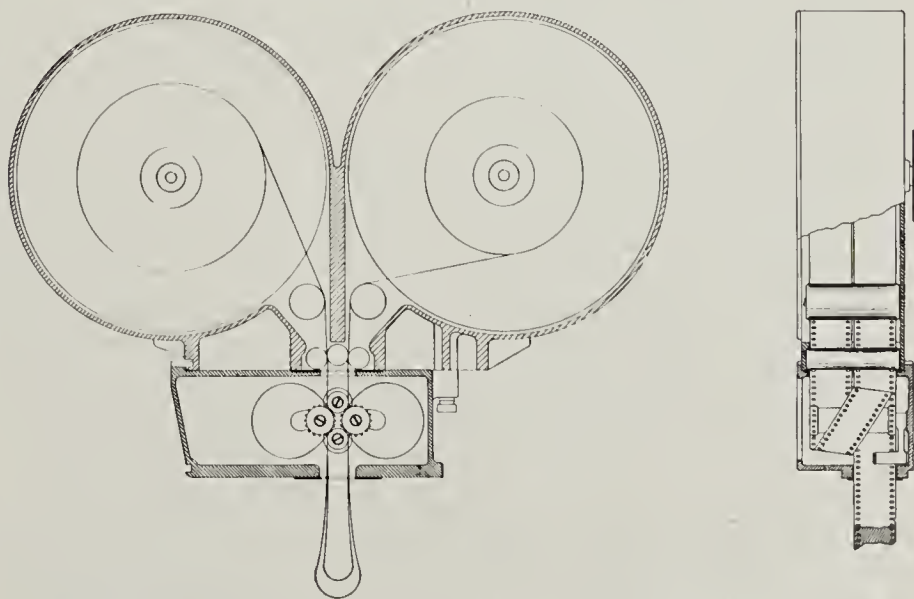
Ever since Cinecolor Corporation announced recently that, because of improved laboratory procedures, studios may now produce their feature films in Cinecolor at a cost of but 10% above that for black and white, the industry and its directors of photography have shown keener interest in this color process.

What has enabled Cinecolor to offer color production at lowered cost is an improved method of applying post-exposure treatment to the film which permits photography with less light, thereby greatly reducing lighting costs. The basic post-exposure technique had been developed earlier by DuPont's photo products laboratories and later applied by Paramount Pictures to the processing of its still negatives and also to its newsreel films. Cinecolor is the first color process to adopt the technique.

The process approximates what is known to the photographic layman as latensification. It involves the intensification of the latent image by a process of re-exposing the exposed negative to weak light for a fairly long period of time.

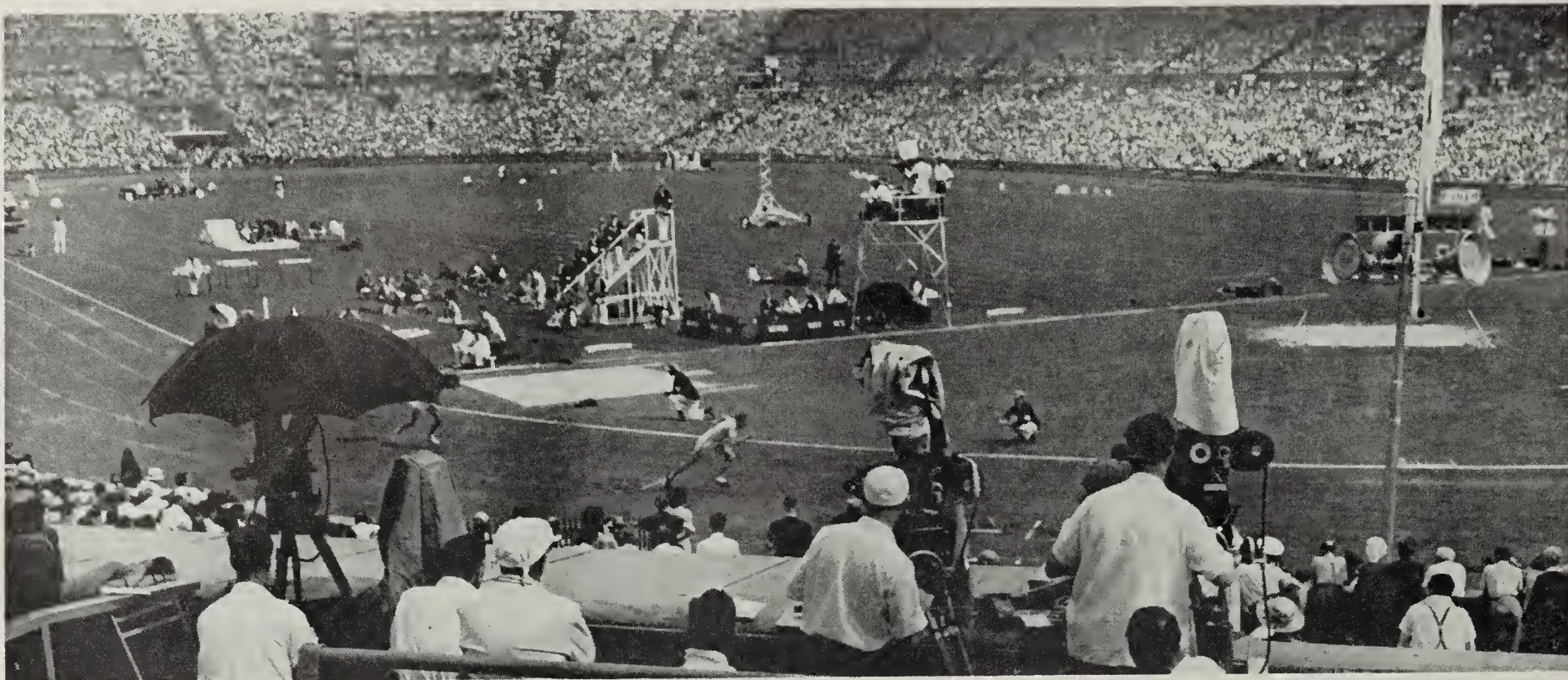
Although the Cinecolor Corporation has been in the business of processing color motion picture film for more than fifteen

*(Continued on Page 389)*



**FURTHERING** the economy of Cinecolor productions is this new 1,000 foot bipack film magazine which reduces frequency of reloading and saves up to 80% of film ordinarily lost in short ends. Diagram shows method of threading film in magazine.





BRITAIN'S famed Wembley Stadium where the principal 1948 Olympic Games events were staged. Camera crews were set up at strategic points around perimeter of the stadium and three special mobile steel camera towers were provided in the infield. In addition, electric-motored

camera cars were used for making follow shots of athletes in the track events. It is estimated that more than 500,000 feet of film were exposed in the 50 or more motion picture cameras employed in the production of the all-color documentary film.—Photos courtesy "Film Industry," London.

# Filming The Olympic Games

**Britain's ace cinematographers were recruited to form the 25 camera crews that photographed the greatest combined production operation ever undertaken by the British film industry.**

By FREDERICK FOSTER

**S**EVENTY-FIVE cameramen and twenty cameras specially adapted for the new British Technichrome bi-pack color film were employed in photographing "The IV Olympiad—The Glory Of Sport," exclusive motion picture record of the 1948 Olympics. The J. Arthur Rank Organization produced the film, setting up a new subsidiary company for the production headed by Castleton Knight, well-known British film producer with years of experience in newsreel production.

Paying a sum of 25,000 pounds to the Olympic Games Committee for exclusive film rights, the Rank Organization shut out all competition, domestic and foreign, and proceeded to produce what was to be the first feature-length film of the famed international sports contests. A total of 250,000 pounds is reportedly the budget that was fixed by Rank for the two-hour picture.

In all, about 25 camera crews were organized by recruiting cameramen from the British feature film industry and newsreel units. Two crews were sent to St. Moritz for the winter sports. Using a Mitchell and a Newall camera, they shot

thousands of feet of Technicolor Mono-pack of the competitions held on the snow-covered mountains of Switzerland. Many of the cameramen had to learn to ski, not only to be able to shoot action pictures while skiing, but in order to be able to ascend the mountain heights with their cameras and gear.

A single Newall camera was used in Greece, where scenes were shot while guerilla battles were being fought in the hills above. On one occasion a plane was chartered for some aerial shots. The local "home guard," ever watchful for guerilla tactics, was not informed of the flight and had just got the film crew's plane nicely in the sights of its anti-aircraft guns, when the cameramen decided they had got all the material they wanted and returned to the airfield. It was some days later before they learned what a close call they had on that flight.

The resourcefulness of the camera crews was put to test more than once. In Greece when a good dolly shot was needed, and local film producers were unable to supply a satisfactory dolly and track, the Olympics camera crew improvised an old bomb

truck, left over from the war, and had local carpenters make a 100 yard length of track from wooden planks. The same camera unit was also responsible for some slick improvisation that improved the glory of the Olympic Torch. The original

**FROM PLATFORMS** of three steel towers, cameramen made high angle shots of the various events according to a planned shooting script. The men in these towers as well as those manning the cameras set up around the track, were in constant telephone communication with the director of the production.





torch in Greece was fed by gas and the flame was almost invisible in sunlight; so a new fuel was devised that gave a colorful flame and a trail of smoke that proved quite impressive on color film. In the scenes shot in Greece, Stan Sayer, head of the unit, wanted a shot of the olive branch bursting into flame. His problem was to get the branch to burst into flame quickly when exposed to the rays of the sun at the focal point of a metal mirror; the answer was simply a bit of celluloid wrapped around the twig which immediately ignited when the magnified rays of the sun reached it.

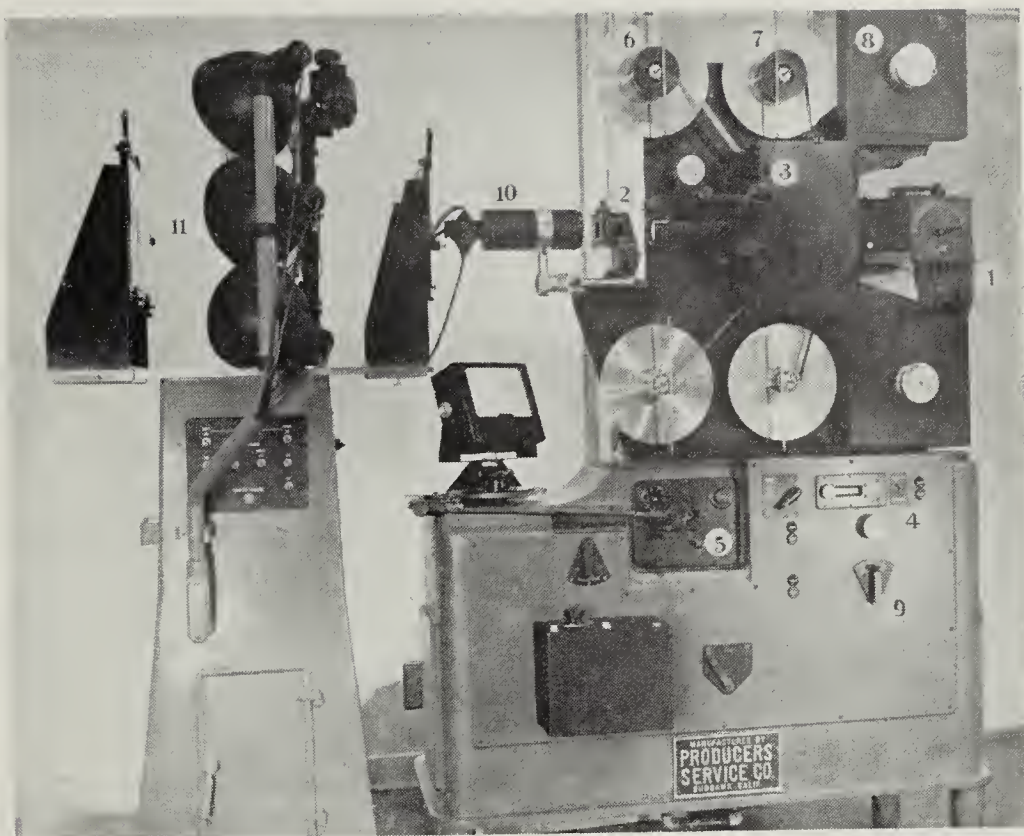
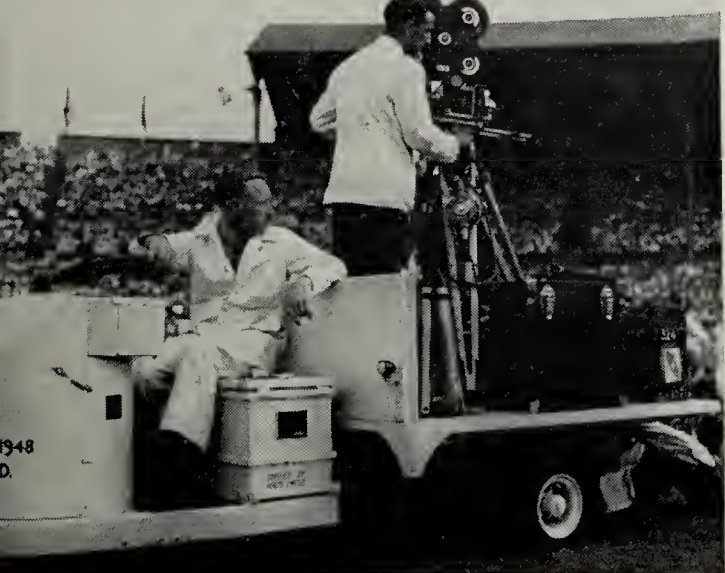
When experimenting with magnesium powder in order to get a bright flame for the torch for the entry at Wembley, the magnesium got so hot it melted the torch. So a new torch was provided, this time fitted with a thick steel bowl for the magnesium. This provided the effect desired, but the poor runner was almost weighed down with it and had to make quite an effort to raise his arm to set off the gas-fed bowl of the flame in the Wembley stadium.

At Wembley, a great many camera positions were established. Three mobile tubular steel camera towers were used to obtain shots of events from a high angle. In addition to the cameras set up at fixed camera positions around the arena, two electric camera trucks were used to film trucking shots alongside the athletes taking part in track events. Camera pits were sunk at key positions to obtain effective shots of long jumps, pole vaults and other activities, while special platforms were built on the roof of the stadium for long shots.

Cameras mounted on platform cars covered the marathon races and hand-held cameras went everywhere.

To film the opening ceremony, one camera crew went aloft in the special  
(Continued on Page 395)

**FAST**, electric powered camera trucks like these enabled the cameramen to follow athletes competing in track events, also to race to any point within the stadium for a special shot when ordered by the production director through the special telephone intercommunicating system.



**NEW CONTACT printer for special effects, designed by 20th Century-Fox Corp's. camera and optical technicians, greatly broadens scope of this company's special effects department. Figures indicate some of the more important structural and functional features:**

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| 2—Gear-driven wipe device.     | 7—Matte film.           |
| 3—Prism-type focuser.          | 8—Negative raw stock.   |
| 4—Stop motion control button.  | 9—Printer motor control |
| 5—Voltage regulator for fades. | 10—Printer light.       |
| 11—Reflected light source.     |                         |

## Contact Printer For Special Effects

**Augmenting its optical printing equipment is this versatile contact printer designed by T-C-F's camera and optical department for producing a wide range of special effects.**

By JAMES GORDON, A.S.C.

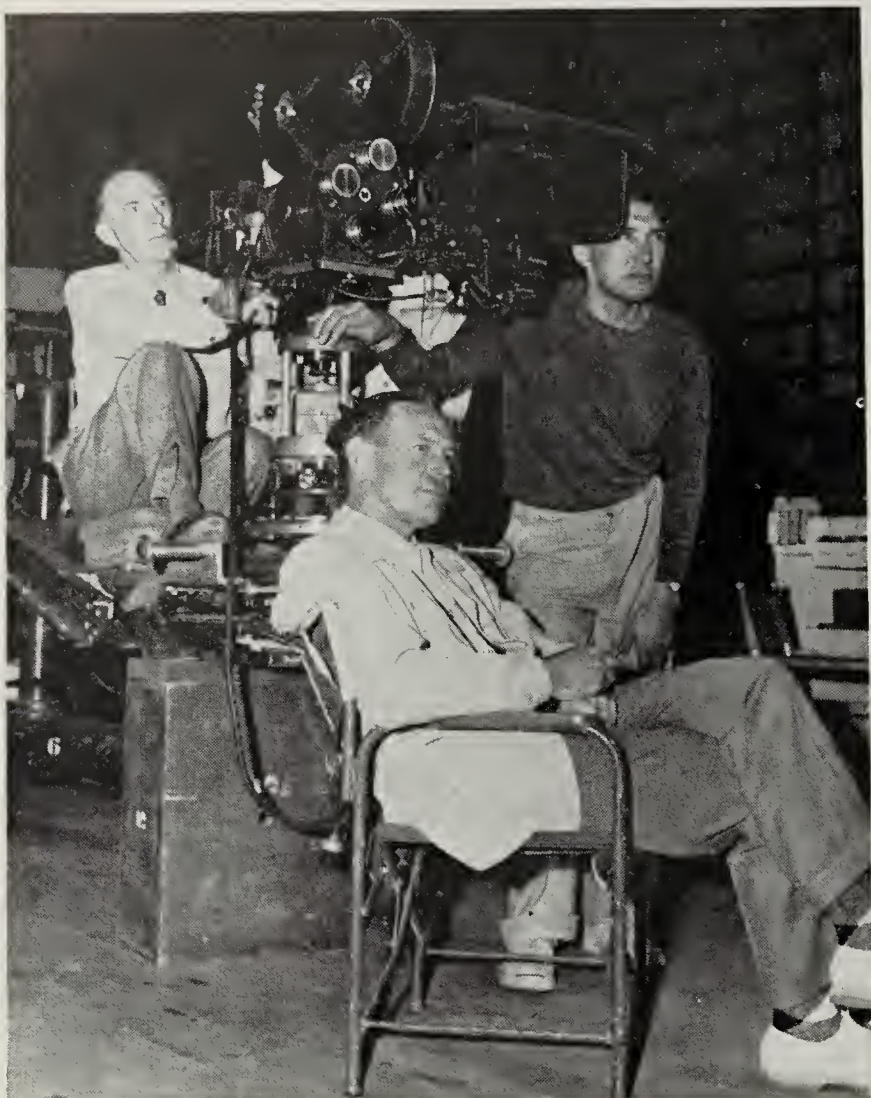
*Special Effects Dept., Twentieth Century-Fox Studios*

**T**he men whose business it is to produce special effects photographically have long felt the need for a contact printer capable of performing a wide variety of cinematic effects. Such a printer has recently been completed for Twentieth Century-Fox by the Producers Service Company from designs and specifications developed and furnished by that studio's Camera and Optical departments. Operating with high efficiency and extreme simplicity, this contact printer will produce the following effects in either black and white or color:

- Fades, dissolves and wipes.
- Superimpose title text over action backgrounds.
- Montages.
- Split-screen, dual role scenes, etc.
- Double printing rain, fog, snow, etc.
- Traveling mattes.
- Tone-down scenes and matting.
- Ghost effects.
- Trailers.
- Quality corrective dupes.
- Dropped shadow title mattes, both sharp and soft detail.

(Continued on Page 392)





JOSEPH LaSHELLE, A.S.C. (foreground), director of photography on the Twentieth Century-Fox production "The Fan," and his camera crew—operating cameraman Don Anderson (left) and assistant Ray Mala. Using the mobile camera, LaShelle materially reduced shooting time on the production.

# Exponent Of The Moving Camera

Not only does the mobile camera keep the story moving dramatically, but it has definite budget advantages as well, according to  
**Joseph LaShelle, A.S.C.**

By HERB A. LIGHTMAN

story moving dramatically (especially a static script like "George Apley"), but it has definite budget advantages, as well. Actually, several scenes can be laced together by means of proper camera movement and photographed as one, resulting in a definite economy of time, effort and expense. On LaShelle's latest picture for Twentieth Century-Fox, "The Fan," the production schedule was cut from 60 days to 42 days, mostly because of the skillful linking of separate scenes through camera movement.

Watching the LaShelle camera crew at work is really an experience. Operating cameraman Don Anderson rides the camera as if it were Seabiscuit coming down the home-stretch. Assistant cameraman Ray Mala (who some years ago distinguished himself in front of the camera in the title role of "Eskimo") goes through some strenuous acrobatics as he operates the follow focus lever with one hand, and a variable diffusion slide with the other. It's actually a toss-up as to whether the more interesting action is taking place on the set or behind the camera.

But Joseph LaShelle is more than just a "cameraman on wheels." His whole approach to motion picture photography has a style and freshness that adds immeasurably to any film story he photographs. His style is never twice the same, since he considers each vehicle a new challenge worthy of individual treatment. His versatility is apparent when one compares the wide range of moods created in his past assignments—the documentary realism of "Happy Land," the eerie sophistication of "Laura," the smooth elegance of "The Late George Apley," the impending terror of "Hangover Square," and the smoldering drama of "The Foxes of Harrow."

Mood is perhaps the most important word in LaShelle's professional lexicon. To him, it is the first element to be considered in the conception of lighting and camera angle for a particular scene. "Mood takes precedence even over realism," he maintains, "because on the screen it is mood that draws the desired emotional reaction from the audience. In real life, for example, an amusing situation might take place in a drably furnished, dimly lighted locale—and it would still be funny. But the same situation realistically reproduced on the screen would fall flat because the dismal mood of the background would be at odds with the comedy situation. A brighter, crisper lighting style would be needed to set a mood that was correct for the action."

In approaching a new sequence, LaShelle decides upon the  
(Continued on Page 394)

JOSEPH LaSHELLE, A.S.C., is a cameraman who likes to "get around"—cinematically speaking. Winner of the 1945 Academy award in black and white cinematography for his dramatic filming of "Laura," he is perhaps Hollywood's foremost exponent of the moving camera. His fluid photographic treatment of such photoplays as "Fallen Angel," "Hangover Square," "A Bell for Adano," "The Late George Apley," "The Foxes of Harrow" and "Deep Waters"—have earned him a reputation as one of Hollywood's top creative directors of photography.

LaShelle's emphasis on camera movement stems from a theory which he holds concerning the role of the camera in production. "The main function of the camera is to tell a story," he explains, "and so it cannot be merely a static spectator standing idly by while the action develops. It must move with that action and become a part of it—a participant, more or less."

He practices what he preaches. On a LaShelle picture, the camera is always mounted on a small, specially designed dolly—even for filming static closeups. This highly mobile camera mount permits a great freedom of movement with a minimum of disruption to set and lighting units—in fact, some of its maneuvers seem incredible when one considers the special problems inherent in moving camera shots. Aside from the ever-present necessity of follow-focus, there is the greatly complicated problem of proper lighting of the set and players as the camera moves about. In a moving camera shot, each new camera position or camera stop is a separate composition and must be given a finished lighting as such. From the cinematographer's point of view, this adds up to a real challenge.

From the production standpoint, however, the moving camera is an important asset. Not only does it help to keep the



**T**HE PRODUCER of commercial or industrial motion pictures—whether he works in 16mm. or 35mm., color or black and white—must keep in mind the fact that any audience before which his pictures will be shown is accustomed to the smooth photographic quality of theatrical films, and more or less expects to see that same quality in any motion picture which he is asked to view. This, of course, throws a sizeable responsibility on the cameraman assigned to a commercial picture. Most cameramen know that the factor for which they may be most easily criticized is the way the players look on the screen; and so the lighting of players is of utmost importance, even in the commercial film where the camera is so often trained on things rather than on people.

The primary fact to consider in lighting players is that they be adequately lighted no matter where they move about the set during the course of action. This means that in the longer shots, general illumination must be considered first. The cameraman knows that he wants lighting in a certain key, and he also has determined the lens aperture at which he would like to shoot the scene. His next step is to add enough general illumination to meet these conditions.

After he has watched a walk-through of the action, he will be able to place his lights so that the players will be well-lighted no matter where the action takes them. Banks of photofloods, broads or large spotlights flooded out are best for general illumination purposes. Having placed these units, the spotlights which give quality and modeling to the players are added next. These include additional lights for key illumination, kickers, and top-lights or back-lights. In a long shot, exposure is determined more or less by the intensity of the general illumination, and these modeling units are balanced accordingly.

We have stated that the players should be adequately lighted no matter where they move on the set, but this statement should be qualified. In low-key sequences especially, the source lighting indicated is often small table lamps which throw light only from one direction. In such a case it is quite proper technique to let a player go into silhouette or at least move into a more subdued type of lighting when leaving the area covered by direct rays of the source light. This type of lighting is entirely realistic and very effective when properly executed in more dramatic sequences.

The most important part of any discussion of the lighting of players is, of course, that which pertains to the closeup. Here the cameraman must be especially precise, since the closeup lens accentuates any lighting flaws which may be present. The key-light in a closeup should correspond, at least generally, with the source established in the longer shots. Some cameramen, if they have a particular scheme of lighting in mind for the closeup, establish this in advance and then modify the general set lighting to correspond in the long shots.

It is impossible to describe any one setup as the right lighting for closeups, since every subject and every situation may require a different scheme, but there is a basic lighting which the cameraman can adapt to fit most requirements. It consists of placing the key-light to one side of the camera, at about a 45 degree angle to the subject facing front. It should be placed fairly well above the subject's eye level and pointed downward at him. The well known Junior spotlight makes an ideal key-light for a closeup when set in this manner.

Next, the fill-light is set. This is placed on the opposite side of the camera in such a position as to soften any shadows cast by the key-light. The intensity of the fill-light will depend upon the contrast ratio which the cameraman feels is best for the mood of the scene he is filming. For color, a ratio between key and fill of 1 to 2 is practically foolproof, and a ratio of 1 to 3 will give a nice modeling effect (especially on the new Commercial Kodachrome stock). However, unless you are after some special effect, it is best not to exceed 1 to 3 when shooting in color. In

*(Continued on Page 396)*

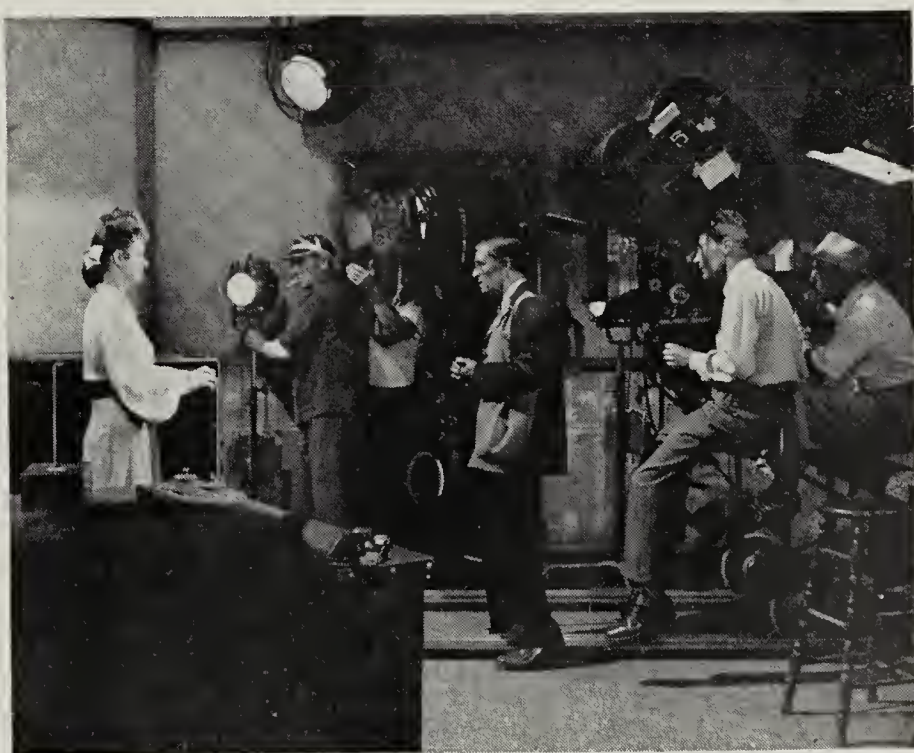


IN LIGHTING players on the set, first consideration must be given to adequately lighting the set for the action, as demonstrated in this scene for an industrial film produced on the stages of Rockett Productions, Hollywood.

## Lighting Players On The Set...

**Careful choice of light units will enable the 16mm. industrial film producer to achieve high professional quality in lighting his sets.**

By CHARLES LORING



AN EYE LIGHT, placed at one side of the camera and at the subject's eye-level, will add an extra measure of sparkle to the close shot.





PRODUCER-director-cinematographer Leonard J. Shafitz starts the Auricon 16mm. camera rolling for a scene in Reynolds Metals Company's "Pigs And Progress," company-produced promotional film on the production of aluminum.



SOUND DEPARTMENT of Reynolds' new 16mm. film production unit is up-to-date in every respect. Here sound technicians record the voice of a narrator for the introductory to a company-produced industrial film.

# "Pigs And Progress"

Story of aluminum, from pigs to finished product, marks Reynolds Metals Company's initial venture into company-produced 16mm. business films.

By LEONARD J. SHAFITZ

INDUSTRIAL 16mm. producers had been using the documentary technique a long time before Hollywood made the factual and actual location films now gaining such great importance. This comparatively new method of story-telling is typical of that used by the motion picture department of the Reynolds Metals Company.

Organized in 1946, the company's motion picture unit works with its public relations and advertising department to produce institutional, sales promotional, and educational films to show the general public the advantages of aluminum in modern day living.

The first major production was designed to reveal the great strides made by aluminum during and since the war. It is a 35-minute production, photographed in Kodachrome. It incorporates an original musical score recorded at the RCA studios in New York. Its title, "Pigs and Progress," stems from the pure aluminum pigs, the basic form of aluminum.

The writer was assisted in the production by Alfred K. Levy, former Signal Corps cameraman. We started on a 5000-mile trip through the east and mid-west using the barest of photographic equipment. A station-wagon with camera top served as transportation and a 7-ft. trailer carried a 15-KVA transformer, one 5000-watt spot, six 2000-watt spots, and an assortment of photofloods. A Cine Special 16mm. camera was utilized during most of the production, but a 16mm. Filmo



SUCCESS of company's initial 16mm. promotional film led Reynolds Metals Co., to provide this spacious and fully equipped sound stage for its industrial film production unit headed by Leonard J. Shafitz.

also was used for hard-to-get shots that required hand-held camera operation.

The story of aluminum is fascinating. Its production starts in mines as red mud, goes through a long chemical process and a complex electrolytic operation to produce the virgin metal. The task at hand was to dramatize this story in color so that more people would come to know how this miracle metal is made.

At Bauxite, Arkansas, where Reynolds Metals Company has huge strip and underground mines, the first of many problems was encountered: to secure good Kodachrome exposures 300 ft. underground, working in 12 inches of mud, without any power lines. After a short course in underground safety, we were fitted out with boots, headlamps, and safety helmets. To get power to operate two 2000-watt spotlights, two electric mine loaders, each equipped with 60-volt batteries, were connected in series to give us the necessary 110-120 volts. Shots were carefully planned in advance so that battery drain would not affect the color temperature harshly, enabling us to shoot without recharging.

(Continued on Page 388)



# *Questions and Answers*

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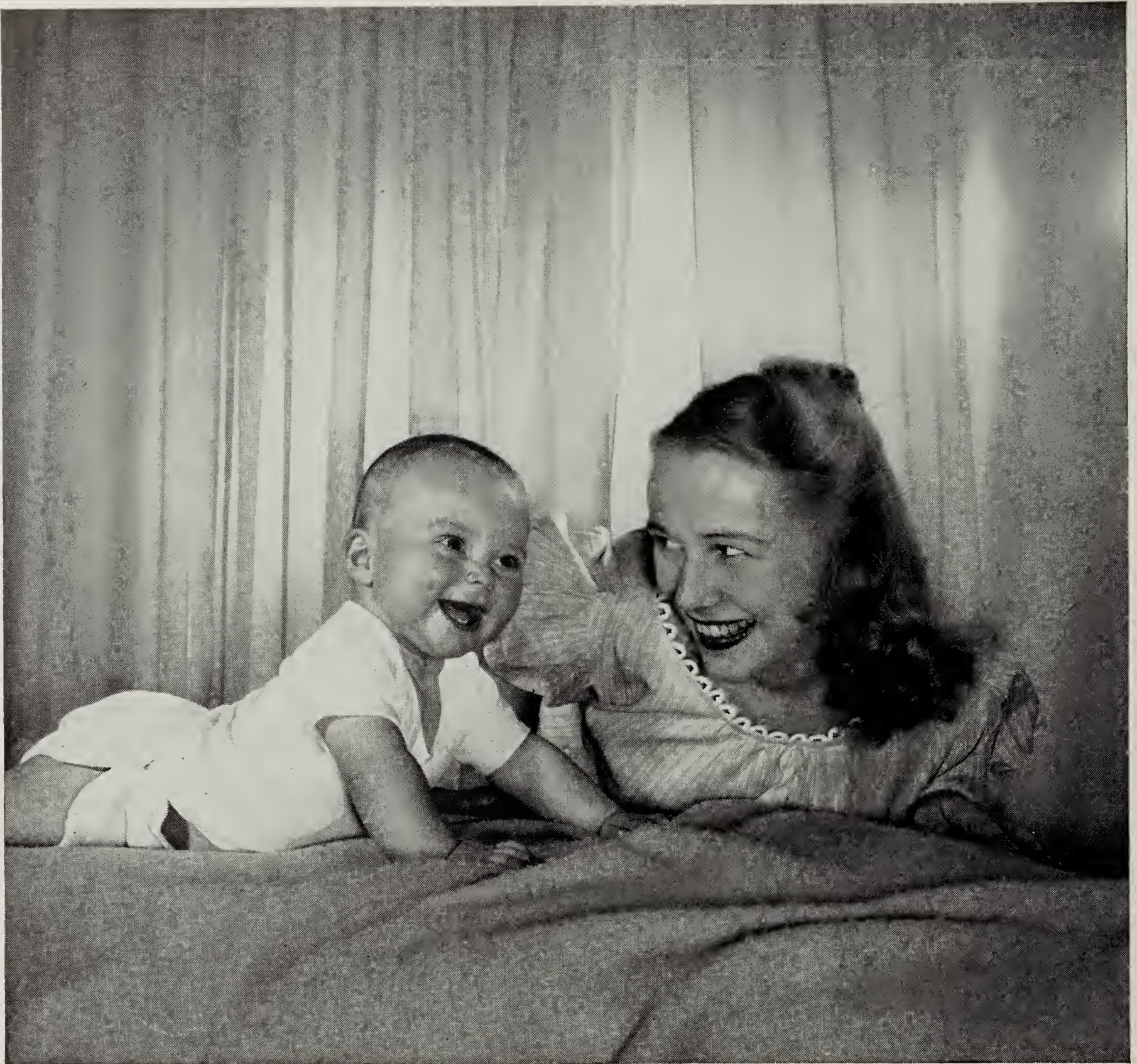
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—Distributors—





## How to keep a baby's eyes open!

Babies can get a movie photographer pretty upset sometimes.

For as soon as you switch on your flood lights (to get some indoor shots of a baby) he starts to squint, squirm, even shuts his eyes because the glaring flood lights irritate him.

Professionals have found, though, that by using super-fast Ansco Triple S Pan film, you can use less artificial light or move the lights back farther.

That means less glare. Babies (and adults too) aren't as apt to fret and

squint. They don't tense up the way they do under glaring lights.

And the extreme speed of Triple S Pan film also means that you can take outdoor pictures when the lighting is poor. Your screen images will be sharp and lifelike—professional looking. Ansco Triple S Pan film is available in both 8 and 16mm sizes—at any dealers. **Ansco, Binghamton, New York.** A Division of General Aniline & Film Corp.

**TIPS ON TITLES**—When taking pictures of a baby, it's effective to have the

baby in the title run. Scrawl the title on a blackboard, and put the baby next to it with some chalk in his hand.

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# 16mm. and 8mm. Cinematography

## S E C T I O N

**W**HAT IS the secret of good 16mm. Kodachrome duplicates? To what extent can the photographer control the quality of his dupe prints? These are questions frequently asked by 16mm. movie makers after screening a print of their first duplicated color film. The secret of good quality duplicates involves several factors and the things the photographer can do to assure a relatively successful print are many.

If you are preparing a color film for reproduction for the first time, allowances should be made for some difference in quality that may result in the dupe prints. In the process of duplicating, colors are sometimes altered and contrasts built up, depending on how well the original was photographed. For this reason it is incumbent upon the photographer to produce an original of highest photographic quality.

Every day, color laboratories are receiving films for duplication, among which are some that would serve as excellent examples of what the cameraman should not do in photographing them. Among these are the work of ambitious movie amateurs producing an industrial or promotional film for perhaps the first time; of a lecturer hoping to use his picture to augment talks on his travels; and not infrequently of a professional cameraman or producer.

The importance of careful photography in the production of a color film that is to be duplicated has, more or less, been ignored by many cinematographers. There has been little enough said about this very important problem that should have come in for a lot more discussion long ago. While it is true that most professional 16mm. film producers or photographers have had good results, they have learned by their own experience and have acquired the know-how the hard way as to what kind of color photography will render duplicates of best quality.



**TYPICAL** of compositions on which many color photographers err in exposure is this scene of two girls against a brilliant sky. Allowance must be made for the predominant sky area in taking a meter reading, otherwise under-exposure will result with consequent loss of detail in subjects' faces.

## Color Dupes Require Careful Filming

One of the most important factors that must be considered by the photographer in shooting Kodachrome is the avoidance of extreme contrast. In the process of making the duplicate the contrast has a tendency to build up. Therefore, what one sees in the original film will not always reproduce the same way in a Kodachrome print.

For example, if a person with an extremely white or chalky complexion is photographed in color standing before a very dark background, even though good detail can be discerned in the original, the same scene, when printed to favor the subject's face, will go completely dark in the shadows—often to the point where no detail whatever can be seen. Near the top of the list of "don'ts," therefore would go the admonition against shooting scenes of this type where they can be avoided.

To counteract extreme contrast in examples of this kind, the use of reflectors will lighten up the background and tend to bring the lighting range more into balance. No reflected light should be used on the subject in such an instance, of course. To further lessen the contrast between subject's features and the background, makeup may be applied to subject's hands and face, thus reducing the variance between the extremes of light

**Some tips for 16mm. movie makers planning Kodachrome films for duplication.**

By **LARRY E. LAYOS**  
*Color Reproduction Company*

and dark in the scene. This procedure should also be kept in mind when photographing persons wearing clothes of other than pastel shades. If a subject wears a deep green or brown suit, more printing light will be required to penetrate the film in order to bring out detail, with the result that detail will be washed out in subject's face. In such an instance, heavy makeup or having subject don lighter clothes would be called for to properly balance contrasts and thus insure a normal print quality for the scene.

Extreme contrast is a common error in indoor as well as outdoor photography and the photographer should be just as cautious when shooting Kodachrome indoors with artificial light, especially in lighting his backgrounds. Too often a cameraman, especially if he is making his first extensive production

*(Continued on Page 387)*



# Lighting Home Movie Interiors

**You can approach the three-dimensional lighting of the professional if you know your photofloods and where to place them.**

By ALFRED L. GILKS, A.S.C.

**P**UT A PROFESSIONAL cinematographer behind an 8mm. or 16mm. cine camera and give him only the photofloods the amateur uses for lighting—but enough of them—and he will invariably put on film a photographic result comparable to that he achieves at the studios. Using the same equipment as the amateur, he has added only his lighting know-how to the procedure. Let the movie amateur acquire a measure of this same professional know-how and he, too, can photograph interiors that are photographically good.

It often happens that when the professional talks to the amateur about lighting, the amateur is confused by the seemingly intricate and endless lighting units that he is told are employed to achieve professional lighting in the studios. The movie amateur, usually with only photoflood lamps at his disposal, does not know that he can produce artistic and effect lighting in his movies with these very

same lighting units. What he must know, of course, is how to place his lights to attain the effects he desires.

The beginning amateur invariably shoots his indoor movies using one or two photoflood lamps set next to the camera, flooding the scene with light. What results is flat lighting, and this is often quite satisfactory for his initial try at indoor movies of family activities—birthday celebrations, Christmas holiday festivities, etc. But sooner or later the serious student of cinematography endeavors to improve his lighting, and this he can do simply by adding more lighting units and carefully placing them about the set. When he arrives at this point, he will want to know about all the various photoflood lamps that are available and what, specifically, each type will do for his lighting problem.

He will undoubtedly be familiar with the No. 1 and No. 2 photofloods. These are inexpensive high intensity lamps of

limited life which should be used in an approved reflector of maximum effectiveness. When not used in a reflector, these lamps are only about 50% effective—that is, about half of the light volume is lost.

Photoflood No. 1 is about the same size as a standard 60-watt lamp and draws 250 watts at 115 volts. Photographically, it is equal to as much as 750 watts in standard lighting lamps. As many as six may be safely used on one household lighting circuit and the rated life of the No. 1 lamp is about three hours. It is rated at 8,650 lumens at 115-volts and has a color temperature of 3400° K.

Photoflood No. 2 is the same size as a standard 150-watt lighting lamp, draws 500 watts at 115 volts, yet it's photographically equal to as much as 1500 watts in standard lighting equipment. Three of these lamps may be safely used on any one house-lighting circuit properly fused. The No. 2 has a life expectancy of about 6 hours at 115 volts, is rated at 17,000 lumens, and has a color temperature of 3400° K.

The No. 4 photoflood is about the same size and shape as a regular 300-watt general service lamp. It has a mogul screw base instead of the standard base that features the No. 1 and 2 photofloods and requires a special adapter or fixtures having a mogul receptacle. It is said to be 2½ times as effective photographically as a regular 1000 watt lamp and is rated a life of 10 hours when used at 115 volts. This lamp is rated also at 33,500 lumens and, like the No. 1 and 2 photofloods, has a color temperature of 3400° K.

Not so very long ago, General Electric Company introduced two new photographic lamps which have greatly widened the scope of indoor lighting for the amateur photographer. These are the No. RFL-2 reflector photoflood and the RSP2 reflector photospot.

The reflector photoflood has a built-in reflector and therefore is an excellent lamp for the amateur who hasn't an excess of reflector units. It gives a smooth 60-degree controlled beam of light that is photographically equal to 1500 watts

*(Continued on Page 386)*



THE LIGHTING in this scene from "The Dark Mirror" is an excellent example of source lighting for the amateur to study. Note how the important illumination comes from overhead, as from some natural light source such as a chandelier.



*Announcing the biggest news in the history of 16mm. and 8mm. movie optics...*



## A complete, new series of Kodak Cine Ektar Lenses

*Important news, indeed, for advanced movie workers—a series of standard, wide-angle, and long-focus lenses that are the finest ever made for 16mm. and 8mm. motion picture cameras.*

Remarkably fast, superb in performance, and unmatched in ease and precision of use, these new lenses qualify in every way for the name, *Ektar*—Kodak's highest quality designation. The lenses meet the highest standards of definition and edge-to-edge sharpness... provide unmatched flatness of field. Even at their widest apertures, performance is outstanding. Aided by the unique optical qualities of Kodak rare-element glass, they produce superb results throughout the full range of filming conditions.

Every internal detail of design contributes to the

reduction of flare . . . to the transmission of a maximum of image-forming light: All glass-air surfaces of all elements are *Lumenized*; lens rims are blackened; mounts are corrugated; flanges are beveled. The results—excellent contrast, pure colors, increased speed . . . better movies!

*And for convenience and precision...*

Aperture scales are widely and evenly spaced . . . integral depth-of-field scales show the exact range of good focus at all apertures . . . distance scales, more comprehensively graduated than ever before, make possible remarkably accurate focusing. And all lenses take Series VI Kodak Combination Lens Attachments, so that a single set of accessories equips the full complement of lenses.

Most 16mm. cameras accept all seven Kodak Cine Ektar Lenses . . . many "Eights" take four. See your Kodak dealer about equipping your camera with these finest of movie lenses.

**EASTMAN KODAK COMPANY, Rochester 4, N. Y.**

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FIRST of Eastman Kodak Company's new series of Ektar lenses for 16mm. cameras was this 25mm. f/1.4 which set the style, both in quality and beauty of design, for the remaining six that followed. Ektar lenses fit any make 16mm. camera and some 8mm. cameras.

# Seven New Lenses For 16mm. Cameras...

New Ektar series, with a common ratio of 1.6 between focal lengths, enables the 16mm. photographer to operate with far greater precision in increasing or decreasing scale of his picture during filming.

By ARTHUR ROWAN

ANY ART, as it progresses toward perfection, requires that the tools employed keep abreast of the needs of the artisan. This has been especially true of 16mm. photography and it is significant that the need for improved cine camera lenses has been recognized and met by a leading maker of cine equipment.

For a considerable period of time, Eastman Kodak Company has worked to improve the lenses for its Cine Kodaks and recently brought forth a superior lens known as the Ektar. The initial Ektar for cine cameras was the 25mm. with a maximum aperture of f/1.4. Incorporating Kodak's new rare element optical glass and Lumenized with Kodak's ultra-hard lens coating, this new lens had at last brought top professional lens quality within the reach of the 16mm. cameraman.

Previously, according to Kodak's technician's, it had been almost impossible to design a lens with an aperture as high as f/1.4 that would give acceptable definition over a 28 degree field, but by using Kodak's new rare element glass, producing such a lens at last became feasible.

Of still greater importance is the announcement this month by Eastman Kodak Company of a complete new line of Ektar lenses ranging in focal lengths from 15mm. to 152mm., with maximum speeds from f/1.4 to f/4.0. The complete series includes 15mm. f/2.5, 25mm. f/1.9, 25mm. f/1.4, 40mm. f/1.6, 63mm. f/2.0, 120mm. f/2.7, and 152mm. f/4.0. The series has been designed in geometrical progression, each focal length bearing a constant ratio to the next below it or above it in the series. Like the initial 25mm. Ektar, the additional six incor-

porate the newest types of optical glass and the latest developments in lens design and manufacturing methods. Availability of these lenses now makes feasible for perhaps the first time, the possibility of the discriminating 16mm. cameraman acquiring a complete set of matched lenses for his camera, capable of producing surprisingly uniform results.

Although all of the lenses are fast—one opens to f/1.4, another to f/1.6—all of them, even at their widest apertures, meet extremely high standards of definition and edge-to-edge sharpness. They also provide unmatched flatness of field. As a result of the unique optical qualities of the rare-element glass which is used in their manufacture, and which today is inter-

nationally recognized as the most recent improvement in optical glass, these new lenses produce excellent results throughout all movie-making conditions. As a series, they place within the range of the 16mm. movie-maker every lens needed for all movie-making situations.

The new lenses are, of course, interchangeable. Precision built and inspected to tolerances approaching 1/10,000 of an inch, each lens is equipped with Kodak's comprehensive system of light control. All glass-air surfaces are Lumenized, lens rims and barrel corrugations are blackened, baffles are provided where needed, and the flanges holding the lens elements are beveled. The result is that lens flare is

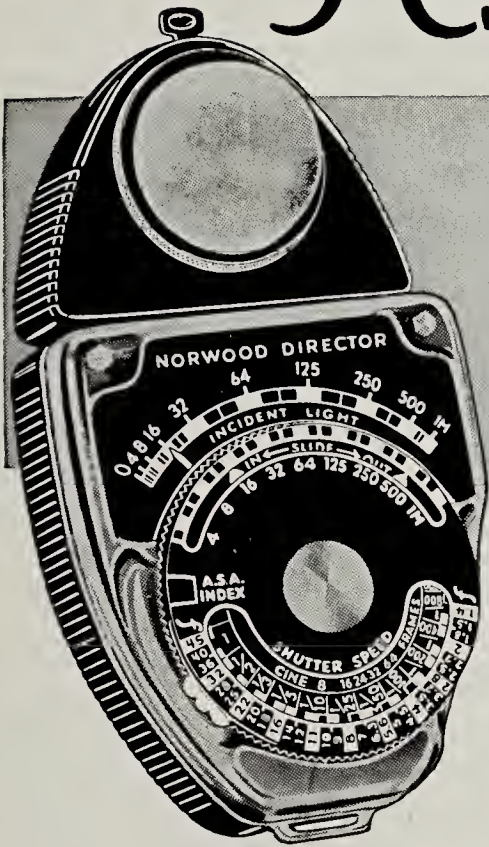
*(Continued on Page 394)*



THE COMPLETE series of new Ektar lenses for 16mm. cameras, ranging in focal length from 25mm. to 152mm., with maximum speeds from f/1.4 to f/4.0. Series has been designed in geometrical progression, each focal length bearing a constant ratio to the next below or above it in the series.



# 5 Excellent Reasons Why



## YOU SHOULD USE THE NORWOOD Director EXPOSURE METER

### FOR CORRECT EXPOSURE DETERMINATION

**BECAUSE** the incident light system of determining photographic exposure has become recognized and endorsed by professional and amateur photographers as the *most accurate*; the *most dependable* and the *quickest* method of determining the one best exposure for the finest color transparencies and black and white negatives—for all photographic purposes—of any system of exposure determination as yet in use.

**BECAUSE** the Norwood Director is the original and only true incident light, photoelectric exposure meter on the market. The Norwood Director, covered by patents; developed by Captain Don Norwood some ten years ago; used professionally in Hollywood Studios for several years before available to all photographers, is a proven product and marks the only major advance in photoelectric exposure determination in a generation.

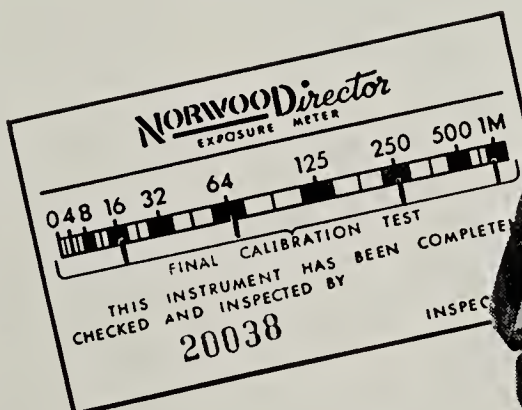
**BECAUSE** the Norwood Director offers you a much longer and more visible light scale—over 100° in angular length, unbreakable wide-angle vision Plexiglas face, high-power Alnico V magnet, extremely high-torque movement, selected top grade photoelectric cells tested to meet exact tolerances, high-speed fully damped needle, precision formed and tested Photosphere\*, individual meter calibration with precision photometric standards.

**BECAUSE** the Norwood Director has been especially designed for incident light exposure determination. It is not a converted reflected light exposure meter. It is the easiest to use; the swivel head containing the patented Photosphere permits the photographer to obtain instant readings from any angle, and there is no necessity to tilt the meter to avoid strong high-lights, such as sky in landscape scenes; no guess work, one position only for arrow on exposure indicating dial. Therefore the possibility of error is reduced to a minimum. The Norwood Director is different and better.

**BECAUSE** tens of thousands of photographers, professional and amateur, have given the Norwood Director their unqualified endorsement, and finally, because the Norwood Director's superiority has been proven. It is the original incident light exposure meter, imitated but not equalled. You get the real thing when you buy the fully guaranteed Norwood Director and its superiority will be evidenced by giving you the one correct exposure every time under all photographic conditions. Everybody is changing to the Norwood Director. Get yours today!

#### CALIBRATION CERTIFICATE

The Norwood Director is a precise instrument manufactured to close tolerances, and referenced to the internationally known standard—the foot candle. Calibration is made in reference to lights supplied by Bureau of Standards and other nationally known laboratories. Every Norwood Director is given a final, four point calibration check and the performance of the meter is recorded on a certificate and packed with that meter, sealed in at the factory, and delivered to you with an unbroken wrapper.



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**ART CORNERS** for securing photos in snapshot albums, provide an ideal means for holding title cards on a homemade title board. Buy them at your photo dealer or local dime store.

**PRISMS** sold in War Surplus Stores are ideal for checking focus for ultra closeups or titles where the camera permits inserting the prism in the film gate behind the lens. Prisms should have two sides polished and one side ground.

**TO PHOTOGRAPH** an object in such a position that it's impossible to bring the camera close enough or to focus it at the desired angle, use a mirror to reflect the object toward your camera. In setting your focus, remember to consider the distance from subject to mirror to camera lens.

**AN EFFECTIVE FADING** device may be made as follows: Secure a piece of  $2\frac{1}{4} \times 3\frac{1}{4}$  cut film from a local photographer and have him develop it without exposing it. Film will be transparent after developing. Then immerse gradually in a container of Craig Ftofade, same as used for making chemical fades on film, until half the panel of film is dyed gradually from clear to full opaque. Cut into strip about  $1\frac{1}{2}$ " in width. To make a fade at end of scene, draw fader across lens slowly, leading with the clear section and stopping when opaque area covers lens. Reverse procedure for a fadein.

**STORE YOUR COLLAPSIBLE** tripod screen in a closet, standing it on end and holding it in place by a loop of leather strap nailed to wall at point near top of screen.

**SHORT STRIPS OF FILM**, accumulating during editing, may be easily coiled by using a flange made to fit your rewind spindle. Make one from a discarded 100 foot 16mm. reel by removing one flange down to the hub. To do this, remove entire flange, trim with tin snips, replace the remaining disc and secure by bending over "ears" on hub.

**TO TEST CAMERA** suspected of scratching film, make a loop of unexposed film, thread it in camera, and run camera for a minute or so. Examine film surfaces to determine presence of scratches. Where scratches result, it will be easy to trace source through position of scratch on film with relation to film gate and sprockets or rollers.

## LIGHTING HOME MOVIE INTERIORS

(Continued from Page 382)

in standard lighting lamps in good reflectors. It draws 500 watts at 115 volts and as many as three may be safely used on the regular house lighting circuit. Its rated color temperature is  $3400^{\circ}$  K.

The reflector photospot, identical in size, shape, wattage, life and color temperature with the RFL2, is an ideal lamp for highlighting, backlighting, edgelighting, etc. Its light has been squeezed into a beam of approximately  $20^{\circ}$ , resulting in a punch of light more than seven times more powerful than that of the reflector photoflood.

These photoflood lamps are not only for amateur photographic use, but are frequently used for special lighting effects in the Hollywood studios. Robert Surtees, A.S.C., used them extensively to achieve natural lighting in both interiors and exteriors in photographing "Act of Violence."

Next to an adequate supply of photoflood lamps, good and proper reflectors are items of lighting equipment that should next come in for attention. These should be of metal—aluminum or aluminum surfaced—and with the reflective surface in good condition. The best type of single reflector is the clamp-on unit that may be affixed to chairs, lighting fixtures, tripods, etc., which will take the place of units mounted on collapsible metal standards. Other lighting units may be purchased complete with telescoping standards and these make the most efficient lighting equipment.

You may ask, "Why undertake this special lighting when ordinary No. 1 and No. 2 photofloods give me acceptable pictures?" But do they? Compare your last indoor color shots with a Technicolor scene and note how the professional production has depth and three-dimension. Of course, you cannot hope to duplicate results of the professional Technicolor production, using Kodachrome or Ansco Color film; but you can approach the results the professional achieves if only by adding that missing factor—three dimensional lighting.

Suppose you are starting to shoot a serious picture, perhaps a contest entry, in which there are several interiors. Effective photography will go a long way toward attracting the judges' attention, regardless of the picture's other values. With the holidays approaching, you will undoubtedly shoot movies of family activities during Thanksgiving, Christmas or New Year's, and here your pictures will demonstrate your real ability as a cinematographer if the scenes are carefully and thoughtfully lighted.

You cannot effectively light your Christmas movies, of course, if shooting is done extemporaneously; but if you plan

a picture based on a carefully prepared shooting script, then the lighting should be as carefully planned also.

Underlying the entire structure of cinematic lighting is the problem imposed by the mechanical factors involved. First a sufficient amount of light must be cast upon the area before the camera so that a satisfactory exposure may be had. Thus the general practice is to lay a foundation of even light all over the set so that there will be the desired degree of luminosity in the deepest shadows. This general lighting is best secured by means of two photofloods in reflectors, placing one on either side of the camera. If the set is small, only one photoflood need be used.

With the general lighting arranged the next step is to determine what is to be the principal source of light for the set. The object is to light your set in such a way that the main illumination appears to be coming from a ceiling fixture, a window, or some other natural source. This may be achieved by using a reflector photoflood mounted high above your player's heads. Mounted in a clamp-on reflector this lamp may be attached to the moulding that runs around the room near the ceiling, or to the edge of a nearby picture frame. If possible, of course, this lamp should be mounted on an adjustable light standard so that it can more easily be placed on the set where needed.

Another photoflood may be placed at a similar elevation to throw illumination on the background, from an angle, which up until now is but flatly lit by the lights set up near the camera. If there is a door at one side of the room, place another photoflood—a No. 1 should do—just inside, so it will throw light into the room in a manner that will make it appear as illumination coming from an unseen chandelier or ceiling fixture.

This is all the light that would be required to photograph this imaginary set in order to enable you to achieve a rounded, three-dimensional effect as opposed to the flat lighting rendered where only one or two floodlamps are used alongside the camera.

In shooting medium closeups, use only one photoflood near the camera for your key light plus an elevated photospot throwing light down upon your subject or subjects from overhead, and from a slight angle. This arrangement will lend the authenticity of natural room lighting. A study of the photo on the opening page of this article will enable the reader to observe how true source lighting was achieved in the scene from "The Dark Mirror," photographed by Milt Krasner, A.S.C. Note how all the light appears to come from a fixture overhead, such as a chandelier. Note also how light cast from an angle on the back wall lends further authenticity to the effect.

To summarize briefly the important



thing we want to emphasize is that by merely adding background lighting and/or overhead lighting to the illumination from the usual beside-the-camera photoflood units, the amateur cine photographer can achieve a reasonably good measure of the three dimensional lighting effect that marks all professional cinematography.

You can, of course, proceed beyond this stage to special effect lighting, low key lighting, and other more intricate lighting effects. But this is something that must be approached with caution, and will come easier when you have mastered the simple rudiments of three-dimensional lighting of interiors.

## COLOR DUPES

(Continued from Page 381)

indoors, will play all the light upon his subjects from the front without considering lighting his background. The result is that the background drops off very rapidly in density in the original which in turn results in a very unsatisfactory print.

Careful exposure, of course, must receive equal attention with lighting. When using either Regular or Type A Kodachrome, best dupe prints result where exposure in the original was accurate. A deviation of a half a stop either way, however, will not materially affect print quality. It is possible for most color film laboratories today to satisfactorily correct a color film during printing for a moderate degree of over- or under-exposure. However, it must be kept in mind that errors in exposure should be avoided and that the utmost color fidelity in duplicates depends upon accuracy of exposure in the first place. Over- or under-exposure affects the color in the image—the first washing it out and the second distorting it; and when true color is not in the original, it cannot be put in nor built-up in the duplicating process.

Many 16mm. film producers are turning to the new Commercial Kodachrome film, which differs a great deal and in many respects from either Regular or Type A. Most of us have become so accustomed to the latter types that, when viewing Commercial Kodachrome duplicates for the first time, there is considerable reaction. When Commercial Kodachrome was first introduced, many 16mm. film producers took an intense dislike to it, probably because they expected so much from it. A great many set out to use the film for the first time, believing it would eliminate many of the faults which actually were inherent in their own photographic procedures. They boldly exposed the film, often under highly abnormal conditions, under the impression that it possessed a certain magic which would compensate for exposure to glary

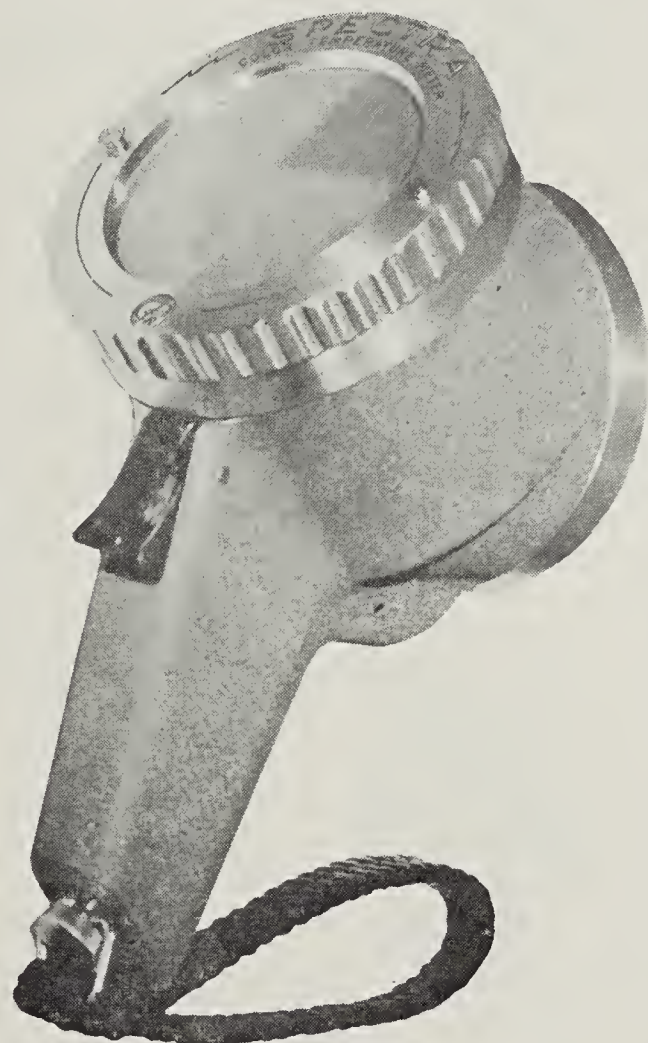
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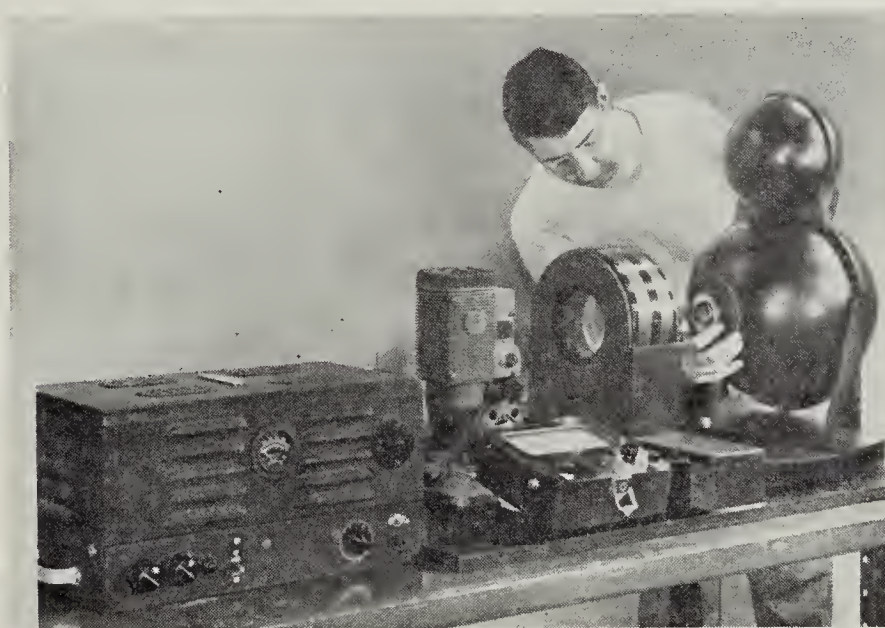


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objects and automatically take care of all over-exposures.

Properly exposed, Commercial Kodachrome will reach into the shadows and provide more detail in the duplicate prints. However, colors will not be quite as vivid and not as contrasting as rendered by the older types of Kodachrome; but they will actually be truer. It is admitted that some colors do not reproduce as strongly with Commercial Kodachrome, but this is easily compensated for by the excellent flesh tones and the good color that reproduces normally in the hair and features of subjects. Pastel shades reproduce with remarkable fidelity.

One thing in particular that must be watched when shooting Commercial Kodachrome is under-exposure which tends to accent grain. Exposures ranging from normal to within a half stop over will result in the best reproductions. Scenes over-exposed one or more stops will show a decided distortion of color and it will be difficult to print the highlights down. Whereas Commercial Kodachrome possesses more of a tendency to even up contrasts, the same lighting principles apply to this film as for Regular or Type A Kodachrome.

As a general rule, it is advisable to avoid use of additional filters except those called for in the instructions for using this stock, as the variation of the light outdoors, in the film stock, and in the processing run will often be sufficient to unbalance the results expected.

The avoidance of extreme contrasts and proper, "on the nose" exposure are the two most important factors to be considered by the photographer making a color film for reproduction. Where there is any question about these factors in a scene, it is advisable to make more than one shot, varying the exposure and the lighting. This is the cheapest insurance the photographer can provide to cover him against failures and retakes.

There are other precautions, too, which will contribute toward the production of duplicates of good quality. Rock-steady camera work eliminates the possibility of blurred images and therefore every take in a production should be made with the camera tripod mounted. Where pan shots are necessary, they should be made moderately slow. Extreme care should be exercised in handling the original. It should never be handled with bare hands and never allowed to touch the floor. Dust and possibly grit thus picked up can ruin an entire reel of film. And if the same grit is deposited in the projector gate as the film is screened, it will damage other films that follow it.

So, from the very beginning to the time your film is brought to the color laboratory for duplication, extreme care must be the watchword—care in lighting, exposure and in handling the film. ★ ★ ★

## PIGS AND PROGRESS

(Continued from Page 378)

Our spots were dropped through the man-shaft, and cable was guarded against dampness and abrasion. Exposures within the medium-shot range were from  $f/2.3$  to  $f/3.5$ . Other underground shots were taken under loading ramps with more or less the same problems. By keeping within the range of available lighting and power, satisfactory exposures were maintained during the entire production.

In order to explain with detail the happenings inside huge tanks and vats when filming the chemical processes, the camera was placed so that detail was of paramount importance. On one occasion, it was necessary to empty one 5-story tank so that the crystallized solution could be seen at the bottom of the tank. Here our camera was supported with wire to prevent any accidental fall from such height into a caustic solution.

At Jones Mills, Arkansas, site of the huge electrolytic reduction facilities, enough power was available to satisfy the most critical cinematographer. Since alumina requires huge quantities of electricity to break it down into aluminum, more than 75 diesel-electric generator sets are used to produce 60,000 amperes of electricity. This power was available and our lights burned 3200K consistently.

A very unusual shot showing 15 huge diesel-electric generator sets was made from an overhead traveling crane. We mounted the camera in the operator's booth. The crane hook carried along two sets of batteries, each capable of 75 volts. A plank was nailed to the booth to take three 2000-watt spots. The shot was then made as the crane moved back over the line of generators, pulling the batteries, lights, camera and personnel along with it.

This set-up required two days of preparation, while the actual shooting time amounted to only 5 minutes. The final production shot was 25 seconds duration. The tremendous noise from the huge diesels required the use of hand signals for cues, while other instructions for key personnel were first given outside the building.

In shooting industrial color, the drama of machinery is the keynote. So we did not "dress" the scenes. When we found the huge rolling mills at Reynolds' McCook (Ill.) plant were a steel grey, we photographed them that way. And when the scenes in other plants lacked the brilliance of the artist's palette, we let the impression record itself, because the picture we wanted was not of handsome blues and reds of the spectrum, but the grimy, powerful, surging wheels of our industrial progress.

One of the major problems that often confronts the photographer of industrial films is the mixture of light present in plants. Usually, there is daylight present, but not enough to permit a proper exposure. In order not to cut the intensity of incandescent lighting with filters, we used our 3200K units. The resulting blueness, when properly controlled, did not adversely affect the shot to any great degree.

When producing technical films, we found it to be of utmost importance that complete accuracy be maintained in regard to every minute detail of picture and narrative. It is the function of the Editorial Department, headed by Mr. G. W. Birdsall, to supervise these scripts which reach a vast audience of engineers, designers, scientists and technical men. For complete acceptance, a film must be authentic, and its story technically perfect.

Animation in "Pigs and Progress" was used to great advantage. It helped explain the breaking down of alumina into aluminum and oxygen in the electrolytic cells.

Animation again proved valuable in dramatizing the decreases in price of aluminum since Reynolds entered the field. In addition, animation was employed to depict the vast amount of bauxite in the earth's crust.

During the two months required to photograph the film, all film exposed in the hot climates of Arkansas and Kentucky were shipped to the lab daily by air express. After photography was completed, the commentary was written based on the original outline of the production. After completion of editorial work, a duplicate was supplied to Mr. Emil Velazco, well-known New York composer, who wrote and recorded an original musical score for the picture. The local RCA facilities were used to re-record the narrative by Andre Baruch, and the music and special effects tracks.

Produced in its entirety by two veterans of the Air Force Signal Corps photographic departments, "Pigs and Progress" was premiered at the RCA Exhibit Hall in Radio City for Reynolds personnel in the New York area. It has been used widely by Reynolds' sales office and shown before many technical groups as well. Prints are in circulation in India, Norway, Sweden, England, and France, and there are now prints in permanent libraries of universities and many industrial concerns. The film marks the first time the complete story of the production of aluminum has been told in color.

The success of the picture has enabled Reynolds' motion picture unit to secure



photographic and sound recording equipment comparable to the finest now in use by leading independent 16mm. film producers. In addition to an all-aluminum studio building recently completed, the department is now equipped with the latest in film editing equipment comprising a sound recording booth, double-system sound camera, preview theatre, a wide variety of sets, a specially constructed camera dolly, and ample AC or DC power for lighting, up to 100,000 watts.

Since completion of "Pigs and Progress," eight additional films have been produced, most of them filmed in 16 mm. Kodachrome.

What allows the fresh approach to this type of industrial film is the added mobility and fluidity obtainable with the 16mm. camera. Now that high quality results are possible with 16mm. professional cameras, pictures can be taken inside the Reynolds plants on location without disrupting production.

We have found that by intelligently seeking out the new and unusual, and depicting it with the 16-mm. camera, 16mm. films can make a contribution to a more effective way of dramatizing industry. For it is through education alone, that people may more readily come to know the marvels of science, the power of thought, and of industry's devotion to bettering the American way of life. It is with this thought that we, as industrial film makers, are telling our stories on film.

## CINECOLOR

(Continued from Page 373)

years, it has only been comparatively recent, since 1944, that the process has gained popular acceptance among Hollywood motion picture producers. This acceptance has gone hand in hand with the public's steadily increasing demand for more motion pictures in color, plus the fact that Cinecolor proved conclusively four years ago that they were able to photograph feature-length films and mass produce prints on a picture at a price within the budget of the average producer.

At a recent get-together in Hollywood between Cinecolor technicians and executives and members of the American Society of Cinematographers, the full results of Cinecolor's recent developments were unfolded. The improvements in the process preceding the introduction of post-exposure were graphically demonstrated in the projection of parts of several recently completed Cinecolor productions. These included exterior and process scenes from "Northwest Stampede," filmed by John Boyle, A.S.C.; night and day exteriors in "Coroner's Creek," filmed by Fred Jackman, Jr., A.S.C.; interiors from "Gal-

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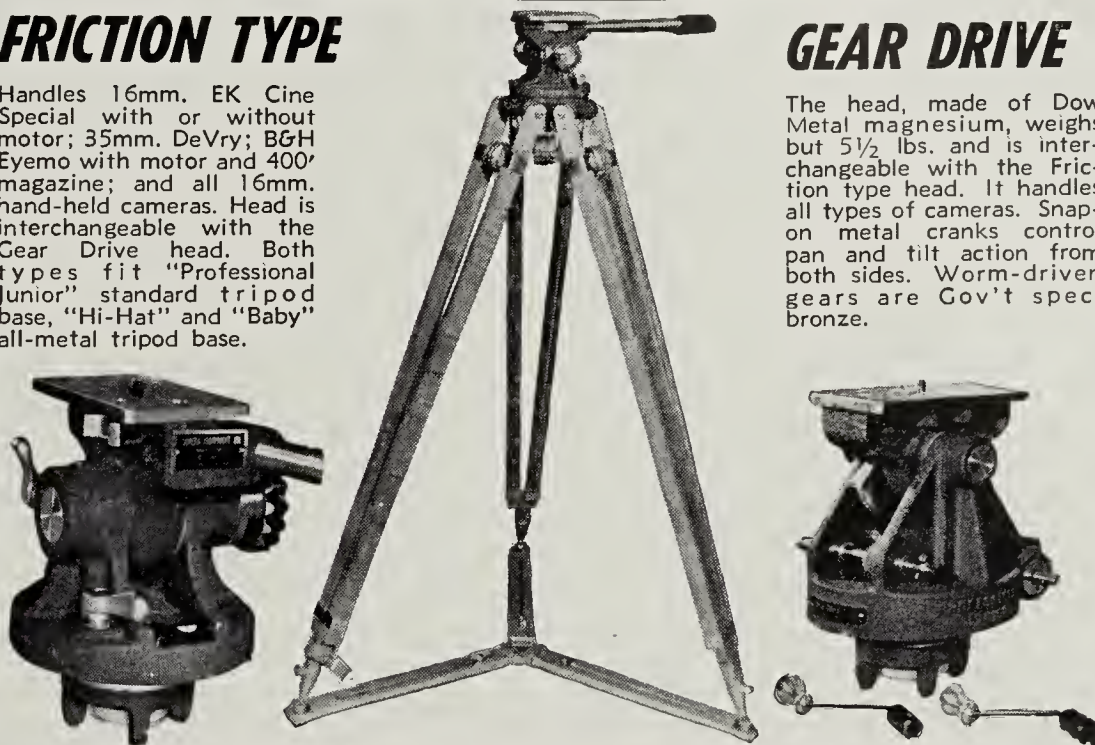
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The head, made of Dow Metal magnesium, weighs but 5½ lbs. and is interchangeable with the Friction type head. It handles all types of cameras. Snap-on metal cranks control pan and tilt action from both sides. Worm-driven gears are Gov't spec. bronze.



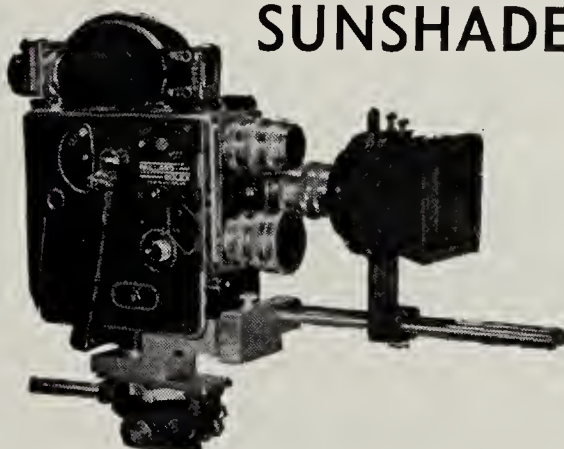
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lant Blade," filmed by Burnett Guffey, A.S.C., and Charles Lawton, A.S.C.; and scenes from "El Rancho Grande," a Mexican production filmed in that country by Jack Draper.

John Boyle and Fred Jackman, Jr., can probably be credited with being the "old masters" among Cinecolor cameramen, both having more Cinecolor productions to their credit than any of the other directors of photography. It was Boyle who, despite the scoffers, pioneered the use of hard lighting in Cinecolor photography and proved that its use definitely enhanced color quality. It was Boyle who guided many another cinematographer on his initial Cinecolor assignment and who is responsible for the adoption by Cinecolor of the 1,000 foot bipack film magazine. His most recent Cinecolor assignment was "Northwest Stampede," in which there is more background projection shots than in any other Cinecolor production to date.

Fred Jackman, Jr., who, because of his earlier association with his father in the development of another color film process, is particularly well grounded in the practical side of color photography, which has enhanced his skill as a Cinecolor cinematographer. To Jackman goes the distinction of being the first director of photography to shoot a production with the improved Cinecolor film—the Nat Holt outdoor epic, "Canadian Pacific." For photographing interior scenes for this picture, Jackman used light ranging from 250 to 300 foot candles. For the simulated night shots, of which there were a great many, he used correction filters, and Macbeths on the lamps.

Where the great economy has been effected in Cinecolor production is the saving in light bills, which have been shaved in many instances as much as 40%. Jackman, for example, shot a great many of the interiors for "Canadian Pacific" using only incandescent lamps, reducing costs and at the same time making his work considerably easier. The post-exposure treatment is applied only to Cinecolor film photographed indoors under artificial light. This enables the cameraman to gain about 1 1/3 stops in the speed of the film.

A development which has done much to improve the quality of Cinecolor photography is the new type solid pressure plate which has been installed in Cinecolor cameras. This plate, which replaces the roller type, has resulted in greater sharpness of image and better register for the bi-pack film as the plate holds the two films in better contact. This development was worked out by the Cinecolor color consultants and the company's camera department. Still another innovation which has resulted in higher quality results is the improvement in coordination pull down pins and register pins.

In the laboratory itself, printing ma-



chines have been improved constantly from the standpoint of contact and registration. This, plus the use of new dyes that give better spectral characteristics, have resulted in better screen reproduction. There is a marked improvement today in the Cinecolor process noticeable in better resolution and grain characteristics of the color images.

Much of the research done by Cinecolor has also resulted in many new cost-saving measures for producers of Cinecolor pictures. These measures have been particularly advantageous to producers during these days of limited production budgets. Among these devices is the new 1,000 foot film magazine for Cinecolor cameras which permits longer takes and a two-fold saving by reducing the frequency of camera loading and eliminating almost 80% of short ends wastage.

In the post-exposure or latensification process, both negatives of the Cinecolor bi-pack system are subjected to the treatment. One being panchromatic and the other ortho, each film receives separate treatment. Note that the post-exposure application takes place after the films have been exposed, as the term implies. We mention this because some have confused the process with that of hypersensitizing, a treatment frequently applied to amateur motion picture films before exposure in the camera. However, where cine films hypersensitized with mercury vapors must be exposed and processed within a relatively short time after treatment, because the effects of hypersensitizing begin to diminish immediately after application, there is no such loss in image quality in films receiving the post-exposure treatment. A photographer could shoot Cinecolor film in China, for example, and not be able to get the film to the laboratory for processing for several weeks, and the films would suffer little or no loss in quality providing they were given the proper care during storage and transportation, of course.

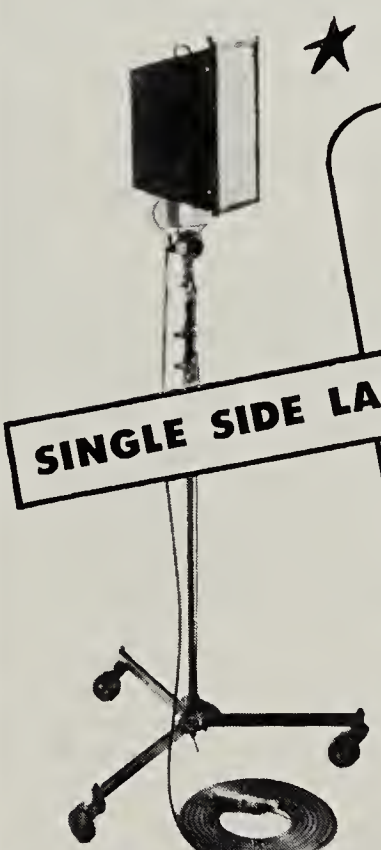
Alan M. Gundelfinger, Vice-President and Technical Director of Cinecolor Corporation, Burbank, credits much of the success of the improvement in Cinecolor films to the cooperation of the directors of photography, art directors and lighting experts of Hollywood's studios. Men in these groups, who have had the opportunity of working on Cinecolor films, he says, have consistently aided in the development of new techniques which have shown to great advantage on the screen.

**TOM TUTWILER, A.S.C.**, is grounded in the wilds of the Aleutian Islands shooting a new Technicolor production for Apex Pictures, "Survival of the Aleutians," after having spent more than 500 hours in the air shooting "Arctic Geography" for the same company. He hopes to be back in Hollywood for the Christmas holidays.



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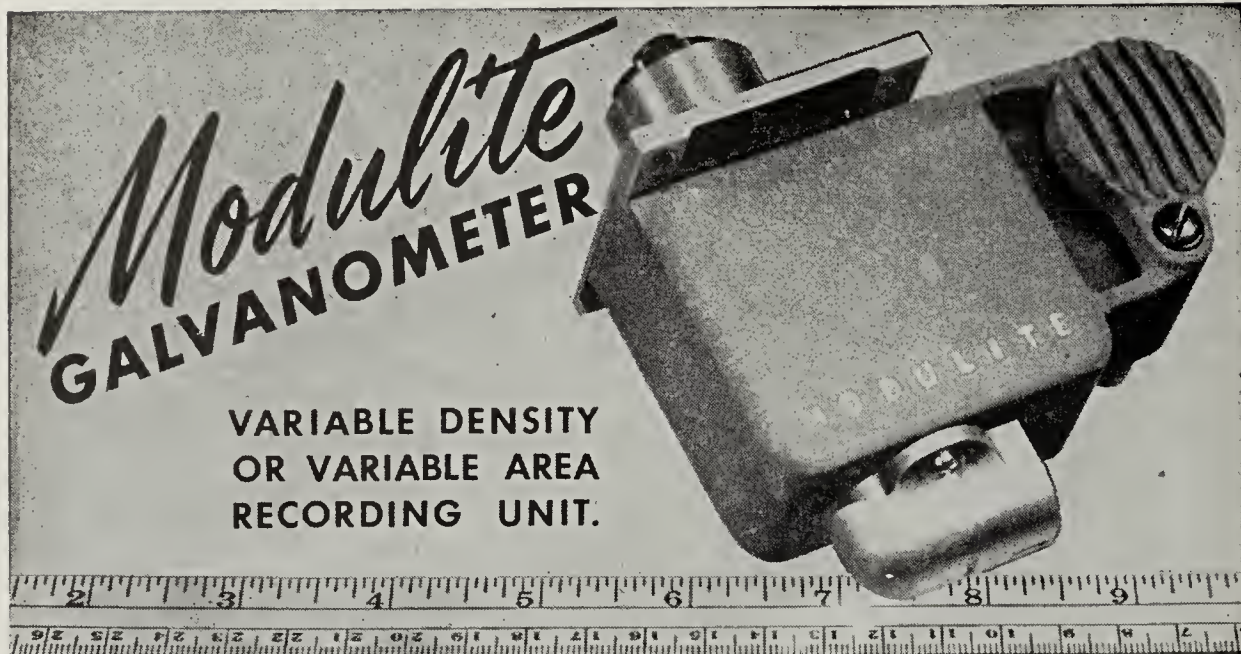


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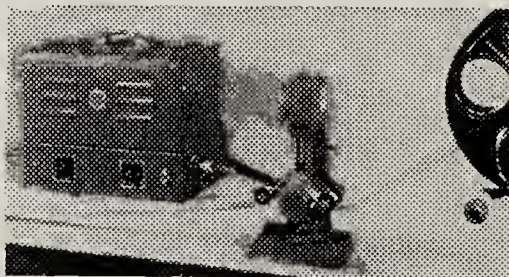
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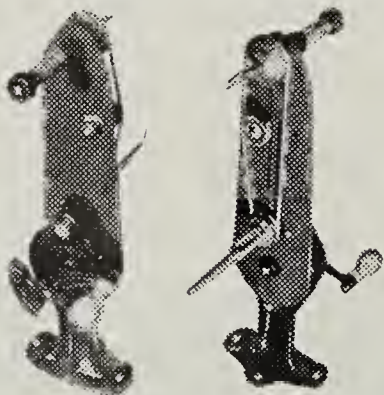
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## CONTACT PRINTER

(Continued from Page 375)

Complete daylight operation of the printer is achieved by use of separate detachable feed and take-up magazines of one thousand foot capacity. The fine grain positives are spooled on rewind type flanges, and the film enters the printer head through light-proof traps. Threading of film is similar to that of a projection machine and film travel is from top to bottom. The take-up mechanism of all film flanges consists of overriding clutches which make possible operation in either forward or reverse direction, thus eliminating need of changing belts from one pulley to another.

From one to three films can be accommodated by the printer head movement where contact pressure is maintained automatically. Threading is simple due to individual sprockets and provision of ample space for film loops.

In designing the automatic fade feature it was decided that for extreme flexibility, all the various lengths of fades should be available for instant selection without the need of shifting gears, or making other time-consuming adjustments. As a result, a separate unit was designed for this purpose and built into the printer. It features a bank of control keys, one each for fades of 1/2, 1, 1 1/2, 2, 3, 4, 6, and 8 feet in length and is indicated at (1) in the accompanying photo. Each key is moved upward to effect a fade in and down to fade out.

With this type of automatic fade control it is possible, for example, to make a two-foot fadeout and, at the full "out" point, instantly fade in, all within exactly four feet. This feature provides extreme flexibility especially in making montage effects. In addition, either the linear or tapered type fade is available when needed. Manual operation of the shutter is accomplished by a separate hand control. The film footage counter is located directly above the dissolve unit which, together with the cue sheet holder in close proximity, contributes to the ease of operation.

Two sources of light are provided. One is a small unit for regular full field printing, indicated at (10) in the illustration; the other consists of a 9" by 12" white board illuminated by six reflector-type incandescent lamps mounted on swinging arms, as shown at (11) in the illustration. The latter feature enables operator more easy access to the board. The small lighting unit, incidentally, is swivel-mounted, permitting it to be quickly set in and out of position as desired.

The printer lens is carried in a non-rotating mount which provides a focus



range from infinity to unity magnification. Focus position is read on a dial indicator calibrated in thousandths of an inch. With this arrangement, all backlash errors are eliminated.

Four accurate printing speeds are available by means of a combination of gear change and a two-speed three-phase alternating current motor. Stop motion is also incorporated into the drive in both forward and reverse printing directions—a feature which is push-button actuated.

Provision is made for projecting a picture on the matte board by making the back plate of the movement removable and adding a small lamphouse to the rear of the printer head. This makes it possible to more readily locate mattes and follow the action of a scene. Also, by means of this projection feature plus a specially built apparatus for holding 8" by 10" plates, dropped shadow title mattes can be made from ordinary titles.

Wipes, moving in any direction, are made either by using film mattes or by means of a gear-driven device located in front of the lens. (See (2) in illustration.) Position of this wipe device is adjustable so that it is possible to obtain any degree of blend between the two picture areas, from soft to sharp. The wipe device can be automatically driven

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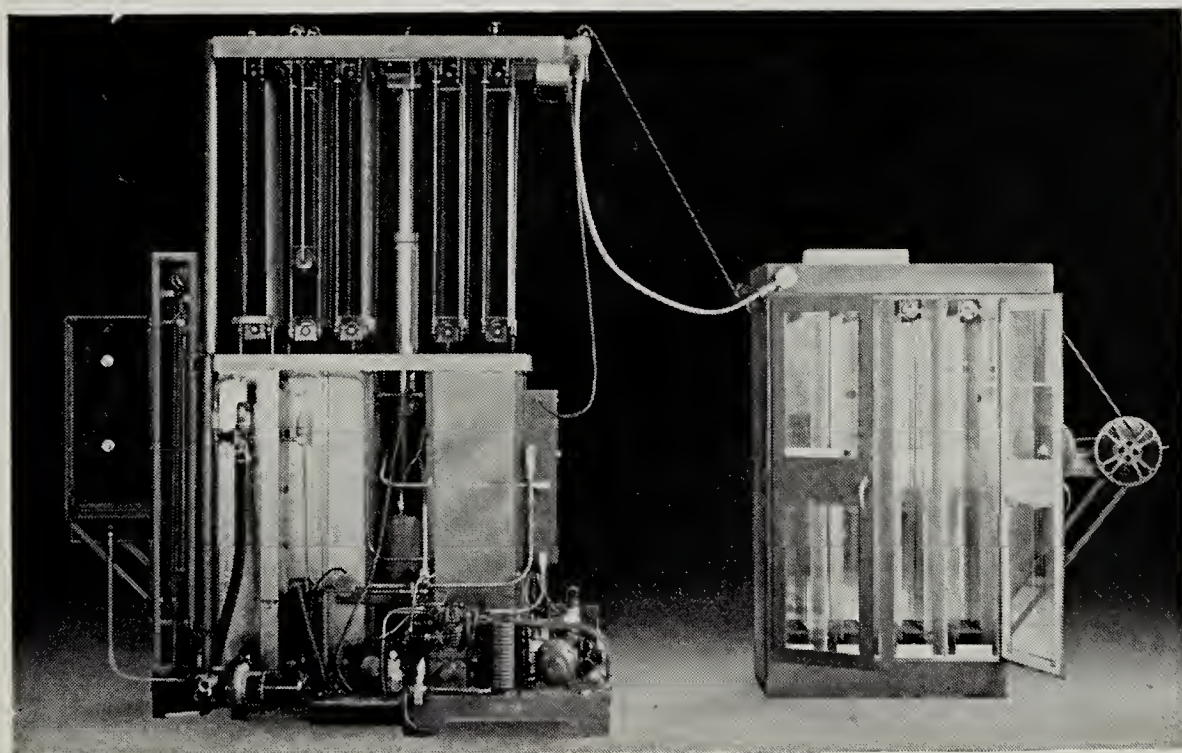
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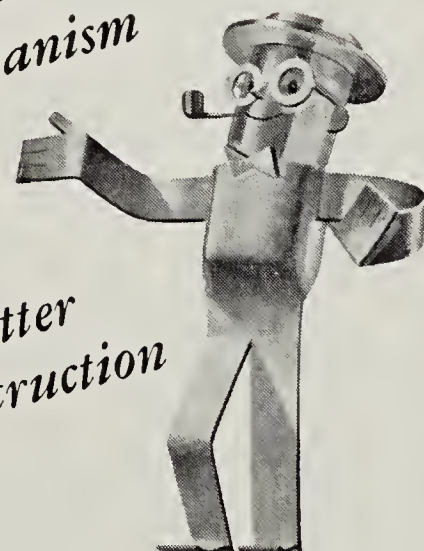
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## EXPONENT OF MOVING CAMERA

(Continued from Page 376)

mood in advance and roughs in his lighting scheme and camera angles accordingly. Actual placement of the lights and camera cannot be done until there has been a run-through of the action on the set—because the director's staging of the sequence may vary somewhat from the action patterns indicated in the script.

LaShelle also maintains that the mood of the lighting is more important than the way any one player looks, and that correct mood in the scene should not be sacrificed to obtain a flattering lighting. This is somewhat of a paradoxical statement in view of the fact that LaShelle is considered tops in the industry as far as the lighting of players is concerned. He lights each actor to bring out the proper personality indicated for that character in the script. He likes to light women subjects with a modeled, third-dimensional effect—shying away from over-diffusion and flat lighting. With a male subject, he strives to bring out the virility of the character through bold cross-lighting that accentuates the interesting structure of the face. Most of the men stars he photographs are delighted with the "rugged look" he gives them.

In line with his theory that the camera should be a participant in the action, LaShelle has a definite approach to the placement of the camera. "I always try to keep the camera within the walls of the set during shooting," he explains, "so that the audience will catch the feeling of actually being on the scene of the action. It gets a bit crowded at times, especially for the camera crew, but the result is more intimate and therefore more *believable* to the audience. When the wall of a room is removed to make room for the camera, the lens becomes a mere onlooker detached from the scene. This is especially true when the longer focal length lenses are used."

Striking composition is another LaShelle specialty. He likes to frame a scene with an interesting foreground object, thus creating a more dramatic visual pattern, and at the same time tying the player in closely with his surroundings. This

technique reached a high point in "Laura" when he zoomed in to a close-up of Dana Andrews framed with a bottle of Scotch whiskey. He likes forceful low angles, sometimes placing the camera at floor level, as in "Hangover Square." His use of a wide-angle lens for most filming gives his compositions bold perspective, and adds to the effectiveness of his moving camera shots.

In exterior filming, LaShelle uses heavy filters to darken the sky and lend the scene a more graphic quality. When the scene is in the wrong location for the type of lighting he wants on a player's face, he will box the player in with black scrims but allow the natural background to show through. He will then light the face with lighting units to produce the effect he wants. "You can't move the sun around," he observes, shrugging off the amount of time and effort involved in this technique.

Joseph LaShelle, A.S.C., is typical of the modern Hollywood Director of Photography who must be at all times a composite of artist and technician, a man whose skillful painting with light and shadow goes far toward making the motion picture the finished art form it is today.

## SEVEN NEW LENSES

(Continued from Page 384)

held to a minimum, stray light is trapped, and a maximum of image forming light is transmitted to produce better movies.

The new series of Ektar lenses will fit all recent Cine-Kodak 16mm. cameras with removable lenses, as well as most 16mm. cameras of other manufacture. Many 8mm. cameras will take four of these new lenses—the 25mm. f/1.4, the 25mm. f/1.9, the 40mm. f/1.6, and the 63mm. f/2.0.

In most cases, lenses are fitted to cameras by means of adapters. No adapter whatsoever is needed, however, to fit any of these lenses to the Cine-Kodak Special II Camera.

The only reason for using interchangeable lenses on a camera is to change the scale of the picture without the necessity of going very close to or very far away from the subject. Therefore, it was decided, when this new series of Ektar lenses was designed, to produce lenses in geometrical progression. With this basic principle in mind, the new Kodak Cine Ektar Lens series was designed with a common ratio of 1.6 between focal lengths. This will enable the 16mm. movie maker to operate with far greater precision in increasing or decreasing the scale of his picture during filming operations.

As far as the relative apertures of the new lenses are concerned, every effort has been made to give each lens the highest possible aperture commensurate with high quality. The principal objectives in designing each lens were to produce sharp definition over the entire field, and sufficient back focus to eliminate interference with the front of the camera, the shutter, and the lens turret. Insofar as possible, the maximum aperture of each lens has been made one of the standard series, such as 1.4, 2, 2.8, 4, etc.

The series of lenses as finally adopted is as follows:

Focal length	f-number	* Angular Semi-field
15.8mm.	2.5	21°
25.4	1.9	14°
25.5	1.4	14°
40.1	1.6	9°
63.7	2.0	5½°
101.5	2.7	3½°
152.4	4.0	2½°

\*Computed for the standard camera gate, with a 12.4mm. diagonal.

The greatest care has been given to the design of mounts to make the new lenses as uniform in appearance as possible. In all lenses except the 25mm. the focusing ring and diaphragm are located in the same relative positions. Similarly, every effort was made to have a non-rotating barrel, so that the index marks for both the diaphragm and focusing scales would remain in a fixed position at the top of the mount. This proved to be impossible in the 15mm. wide-angle lens, but it was done with all the other members of the series.

Every lens is equipped in front with a suitable screw thread for attaching the standard Kodak Series VI filters, attachments, and lens hoods.

A new type of iris diaphragm representing a considerable improvement over the iris diaphragm used on lenses in the past has been incorporated in these new lenses. The new diaphragm employs special L-shaped leaves designed to give a uniformly spaced scale. Thus equal rotations of the diaphragm ring will alter the image brightness by the same proportion in all parts of the scale. This represents a dis-



tinct improvement over the normal type of semi-circular leaf which gives a scale that is very crowded at the smaller end and expanded at the larger end. All lenses can be stopped down to f/22.

The focusing scales on the new lenses are more completely graduated than on any previous lenses. These scales are marked directly in inches for focusing at short distances, and below 2 feet the scales are in red to act as a warning of the need for accurate focus. This makes possible remarkably accurate focusing on subjects at all distances. Most of the new Kodak Cine Ektar Lenses focus way down for magnified closeups of tiny subjects. As an example, with the f/1.4 the movie maker can focus as close as 12 inches and fill the whole screen with some small object, such as a flower, without the use of a closeup attachment.

All marks on the focusing scale, in accordance with ASA Specifications, are measured from the film plane and not from an indefinite point, such as the front of the camera or the front of the lens barrel. This greatly facilitates precise focusing at short distances. Integral depth-of-field scales, contrastingly colored to prevent confusion, show the exact range of good focus at each aperture and at all distances and indicate the degree of precision required in focusing.

In this new series of lenses the serious 16mm. movie amateur and some owners of 8mm. cameras will find the means for attaining much of the photographic perfection for which most are constantly striving. For the professional 16mm. cinematographer, these seven new Ektars will surely be placed at the top of his list of wants, for here at last the 16mm. cameraman has a series of related lenses to choose from that will give him the image quality that has come to be expected of all professional cinematographers.

## OLYMPIC GAMES

(Continued from Page 375)

Olympic Film plane. The heat rising from the massive metal roof of the stadium and the shining tops of thousands of parked cars made flying as bumpy as crossing the Dover coastline on a sunny day.

Cameramen Henry Slagter and Arthur Lemming, using a Newall bi-pack Technichrome camera fitted with four lenses in the turret, rigged up a gadget on the camera's viewfinder that would produce a graduated parallax scale for quick and easy correction when lining up a shot in double-quick time.

Production of the Olympic film was personally directed by Castleton Knight, not only in the planning stages but also from the film control center in Wembley Stadium. During the shooting period, he was in telephone communication with all

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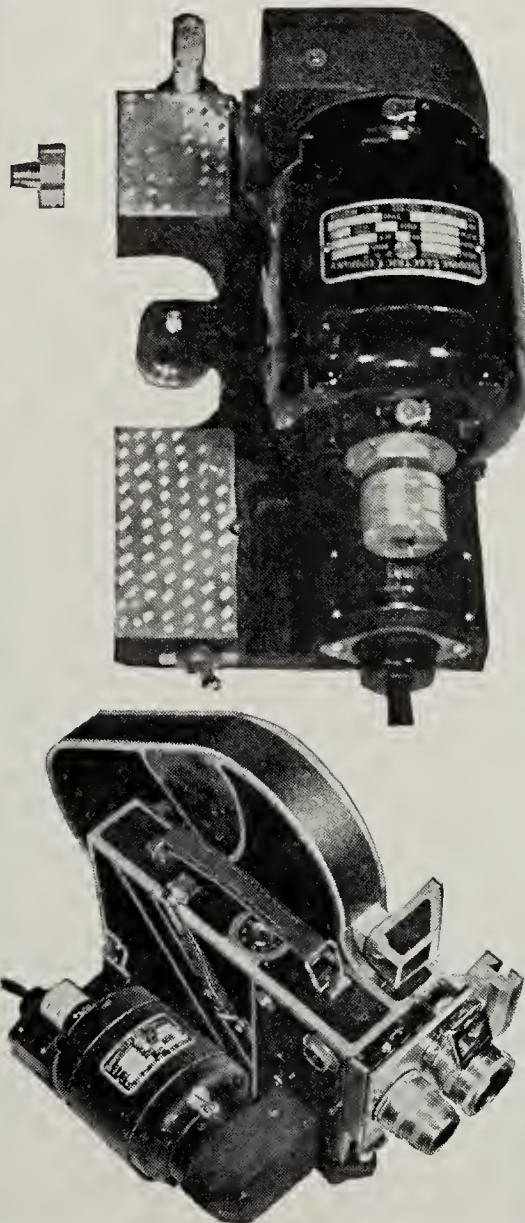
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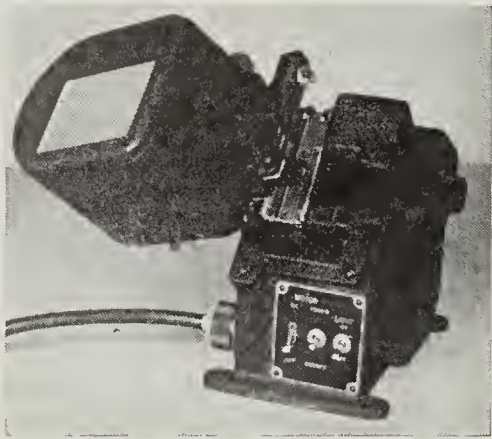
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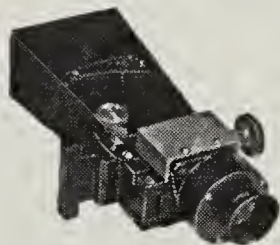


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the camera positions, passing on new instructions, advising on alterations in the continuity of events, arranging for a supply of fresh stock and tackling a hundred and one minor problems.

All of the cameramen wore official uniforms consisting of brown trousers and white sports coats. Every member of each camera crew was provided with a copy of the official program of events and a special typed instruction sheet which indicated what he was to film. With some 20 camera positions established in the stadium, it was obviously necessary to avoid over-lapping coverage and consequent waste of film.

Despite the 20 fixed camera positions, it was necessary to have a corps of "free" cameramen who were dispatched as needed about the stadium to get special shots not indicated in the shooting plans for the day. One would hustle out on the grassy midfield and scale the steel camera tower, haul up his camera equipment, make a series of shots, then scramble down again to be off to some other point in the stadium to catch other action, as instructed by director Knight's communications center. The cameramen in this unit really had to be on their toes.

Filming of the aquatic events in the Empire Pool was carried out by a camera unit supervised by Miss Norma Candy.

Three black and white and three Technichrome crews operated to cover these events. High speed shots of the high diving were photographed by a color camera, while a Debie black and white camera was used for getting slow motion shots at 96 frames per second. A notable achievement was the shooting of underwater scenes during the actual events. To do this, cameramen Duggie Hill and Johnny Gunn fought their way through a maze of brine pipes, crossed over water tanks, crawled on their stomachs through five inches of water and finally set up their Newall camera at one end of the glass port looking into the pool just below the water line. No additional lighting was available here and the color shots were obtained by using a Cooke f/1.3 lens, wide open. Throughout the filming in the pool, the crews had to work under natural light coming through the glass roof.

Thus, day by day, from rostrums, pits, towers and cars, the Olympic Games were filmed. Some 500,000 feet of raw stock were exposed in order to capture every exciting moment of the great display. A great deal of money, an elaborate organization, a vast team of cameramen, editors, sound engineers and laboratory staff were assembled from all branches of the British film industry in order to provide the facilities for adequate coverage of this outstanding international event.

## LIGHTING PLAYERS ON THE SET

(Continued from Page 377)

black and white, on the other hand, the sky is practically the limit regarding ratio—and even in normal lighting moods a ratio of at least 1 to 4 should be used to provide proper modeling.

After the key-light and the fill-light have been set, the cameraman may add additional units to polish the closeup. The most important of these is the top-light or black-light, usually mounted above and behind the subject to throw a light on subject's hair and shoulders. Aside from the added artistic touch, the main function of such a light is to give the subject "separation;" that is, to keep him from blending into the set and make him stand out. For the back-light, a high intensity unit, often equalling the key-light in degree of illumination, is invariably used.

You may or may not want to use a kicker light—which is nothing more than a small spotlight used to illuminate a particular facial feature, piece of jewelry worn by the subject, etc. An eye-light placed to one side of the camera and at the subject's eye level, will add an extra measure of sparkle to the scene.

The light falling on the subject can be carefully controlled by means of barn-doors, snoots or diffusers mounted on the spotlight themselves. If the light still

hits part of the subject that the cameraman wants to subdue, this may be corrected by screening the light off with a gobo, a rectangular sheet of black board or wire mesh, set up between the light source and the subject.

Generally speaking, women subjects look better in closeup if diffused light is used in photographing them. Gauze or light silk screens placed over the spotlights will soften harsh shadows and create a pleasant modeling light. Women with wrinkles or "crow's feet" usually require a more or less flat lighting to avoid accentuating such features. Where further correction is needed, it is a good idea to purposely over-expose the scene (in order to "wash out" the wrinkles) and then correct the over-exposure in printing.

In lighting men, the aim of the photographer usually is to make them appear as masculine as possible. For this reason, it is better to use light without diffusion. Also, less-fill-light should be used so that the character lines and the structure of the face will have more depth and stand out more clearly. With men subjects, also, the key-light may be placed higher and at a more extreme angle to the side of the camera.

Sequences involving special effects in



the long shots should carry out those same effects in the corresponding closeups. If there is a firelight sequence, for example, the closeups should show the flicker of light on the subject's face. This is done by moving a small branch or twig in front of the light source simulating the fire. Cross-lighting, in which the key-light is set to one side of the subject with little or no fill-light used, is very effective in dramatic sequences. Rim-lighting is a very extreme adaptation of this technique and is executed by placing a light directly behind the subject so that he screens it, his form being outlined with light with his face

going dark. This particular effect must be precisely executed and is not recommended except in very dramatic sequences.

In lighting players on the set, the threefold objective is to have them adequately lighted for the action, to light them in key with the mood of the sequence, and to make them look good on the screen. If the 16 mm. cameraman approaches his lighting problem with these points in mind, his camera results should compare favorably with those characteristic of the professional photoplay.

## BULLETIN BOARD

(Continued from Page 368)

which utilizes a tube differing in characteristics from the familiar image orthicon tube used in RCA television cameras, is intended for use where images are to be transmitted by wire rather than through the ether. It said there are many potential applications for the camera within the motion picture industry. A.S.C. members are checking its possibilities as an aid to motion picture photography, particularly as a means of making pre-shooting studies of action on sets, and for affording the director and others to view the scene and action on a set in true screen perspective as it is being filmed.

AMONG A.S.C. members who journeyed to Washington, D. C., recently to attend

the S.M.P.E.'s 64th semi-annual convention there, were John Boyle, Loren L. Ryder, and Peter Mole. Mole was installed as executive vice-president of Society in recognition of his contributions to technical advances in the motion picture industry.

APPLICATIONS FOR MEMBERSHIP pouring into the A.S.C. in increasing numbers from all parts of the world, has forced the membership committee to invoke a "membership by invitation only," ruling. Unsolicited applications can no longer be considered, nor will further invitations for non-resident membership be extended until the committee has had adequate time to screen the applications already on hand.

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OF THE AMERICAN CINEMATOGRAPHER published Monthly at Los Angeles, California, for October 1, 1948,

State of California } ss.  
County of Los Angeles }

Before me, a Notary Public in and for the State and county aforesaid personally appeared Arthur E. Gavin who having been duly sworn according to law, deposes and says that he is the Editor of the AMERICAN CINEMATOGRAPHER and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily, weekly, semiweekly or triweekly newspaper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the act of August 24, 1912, as amended by the acts of March 3, 1933, and July 2, 1946 (section 537, Postal Laws and Regulations), printed on the reverse of this form, to wit:

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ARTHUR E. GAVIN  
Editor

Sworn to and subscribed before me this 1st day of October, 1948.

(Seal) H. G. MacKintosh  
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## CURRENT ASSIGNMENTS

(Continued from Page 370)

• **IRVING GLASSBERG**, "Calamity Jane and Sam Bass," (Technicolor) with Yvonne DeCarlo and Howard Duff. George Sherman, producer.

### Warner Brothers

• **CARL GUTHRIE**, "Somewhere In The City," with Viveca Lindfors and Edmond O'Brien. Vincent Sherman, director.

• **ELWOOD BREDELL**, "Happy Times," (Technicolor) with Danny Kaye and Barbara Bates. Henry Koster, director.

• **WILFRID CLINE**, "Two Guys And A Gal," (Technicolor) with Dennis Morgan, Jack Carson and Doris Day. David Butler, director.

• **KARL FREUND**, "Montana," (Technicolor) with Errol Flynn and Alexis Smith. Ray Enright, director.

• **TED MCCORD**, "Flamingo Road," with Joan Crawford and Zachary Scott. Michael Curtiz, director.

• **JACK CARDIFF**, "Under Capricorn," (Shooting in London) (Technicolor) with Ingrid Bergman and Joseph Cotton. Alfred Hitchcock, director.

• **SID HICKOX**, "Colorado Territory," with Joel McCrea and Virginia Mayo. Raoul Walsh, director.

• **CARL GUTHRIE**, "Deadlock," (Subsequently retitled "The Side Of The Law," with Viveca Lindfors, Kent Smith and Janis Paige. Richard Bare, director.

• **BOB BURKS** and **WILFRID CLINE**, "Task Force," with Gary Cooper, Wayne Morris and Julie Brennan. Delmar Daves, director.





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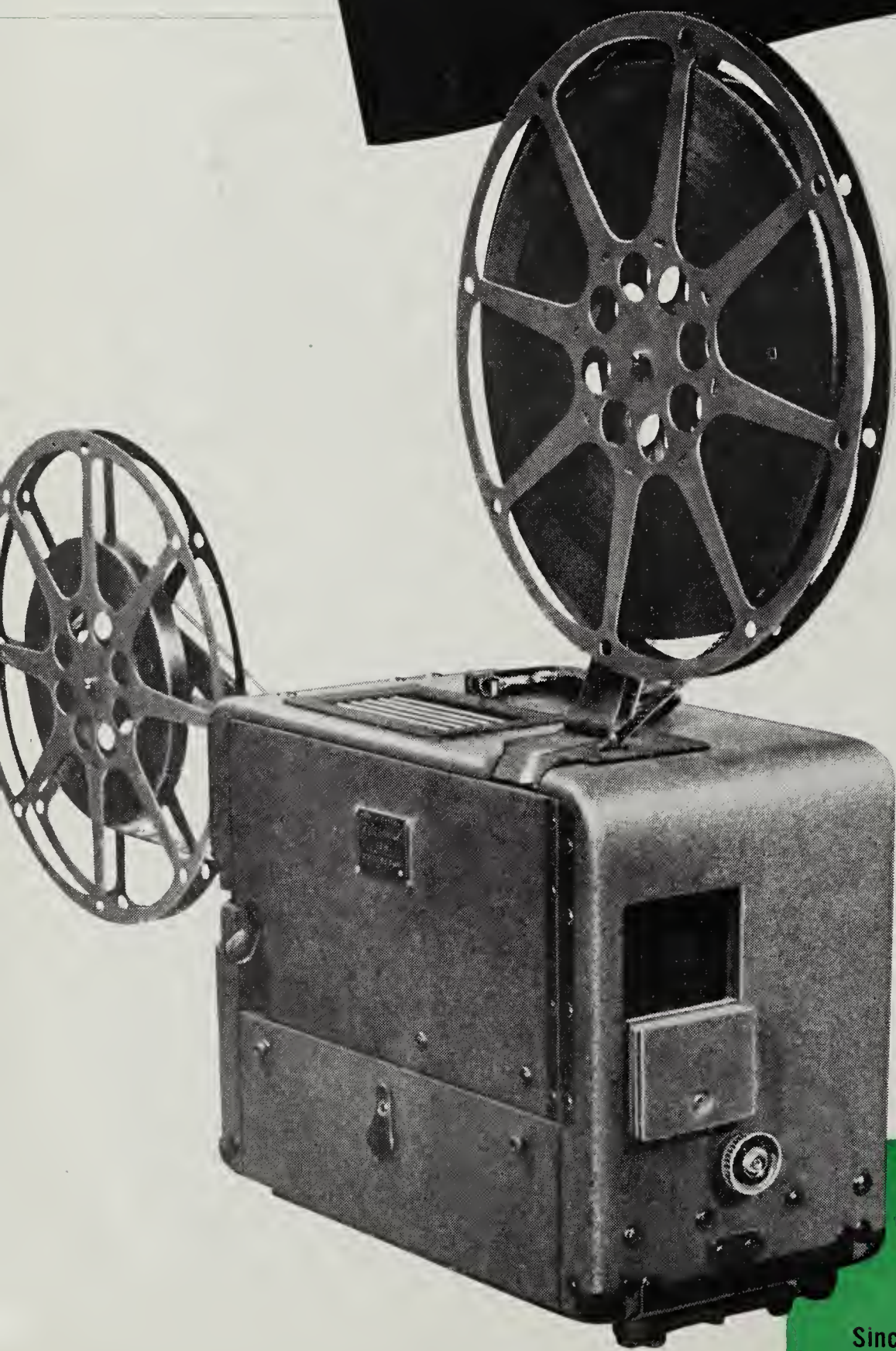
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DECEMBER  
1948



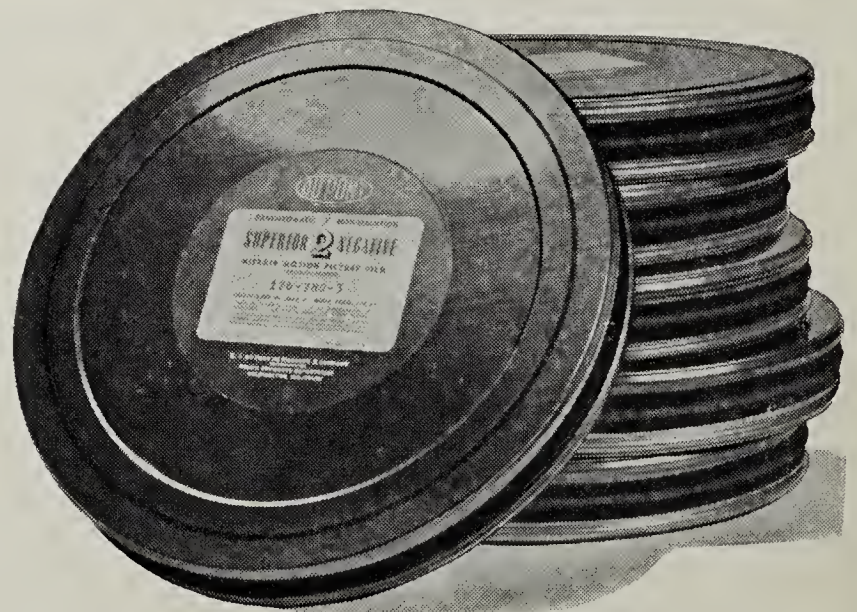


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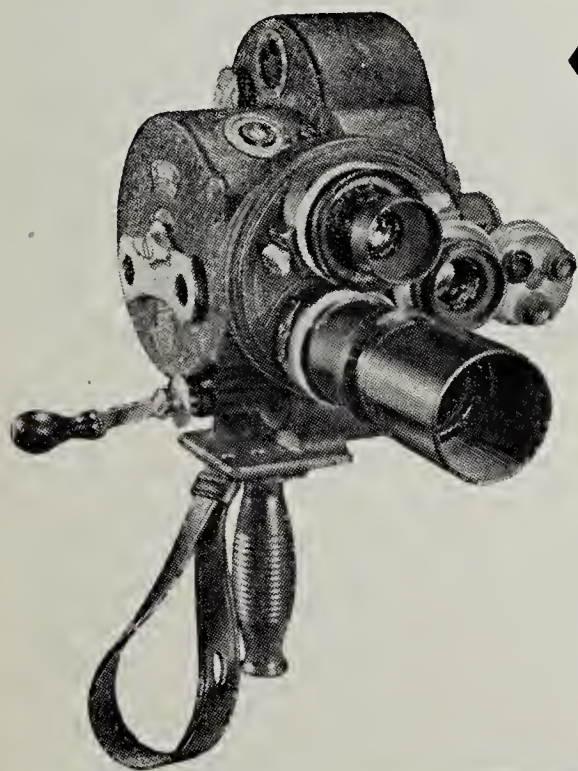
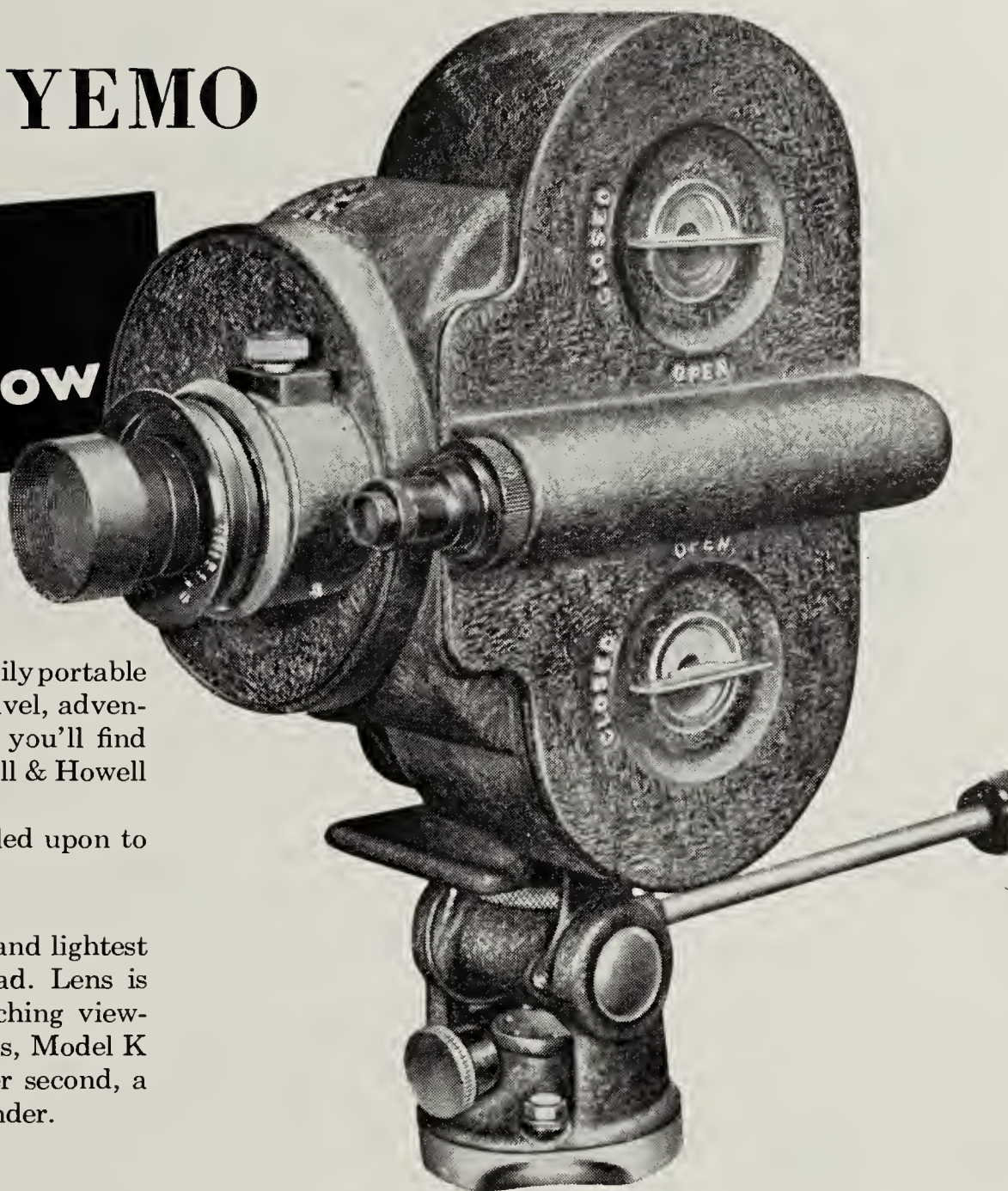
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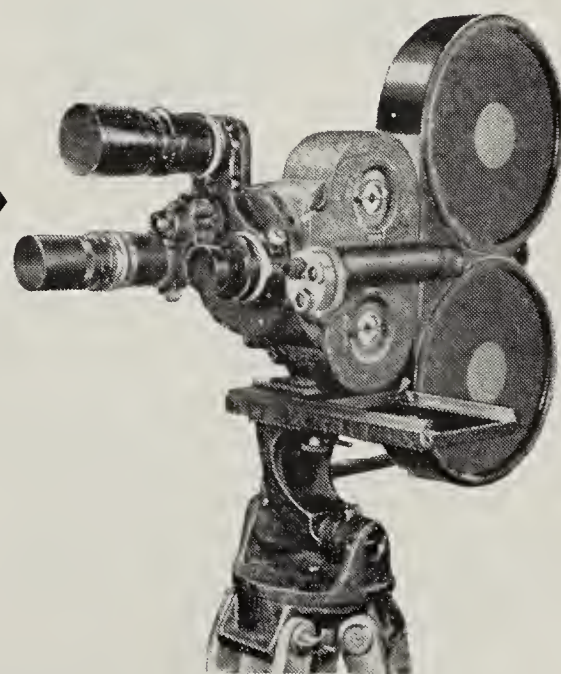


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# Hollywood Bulletin Board



JACK CARDIFF, A.S.C., who flew to Hollywood from London recently to shoot final scenes for "Under Capricorn" at Warner Brothers' ranch, was entertained by group of fellow A.S.C. members at a dinner at Chasen's, arranged by Charles Rosher. Cardiff spoke briefly on advantages of teamwork methods followed in British movie studios. In photo at right, Cardiff (playing piano) and hosts bring event to happy ending with strains of "Auld Lang Syne."



**NEW ASSOCIATE** members recently admitted to the American Society of Cinematographers include Sidney P. Solow, Wallace V. Wolfe and H. W. Remerscheid.

**GEORGE SCHEIBE**, widely known among cameramen for his filters used to obtain special photographic effects, succumbed suddenly to a heart attack November 15th.

**STANLEY HORSLEY, A.S.C.**, has developed a radically new type color temperature meter and reportedly is dickering with a local manufacturer to turn it out on special order. Because of its limited field, meter will be custom made. It is said to be ideally suited for special effects work.

**RAY FERNSTROM, A.S.C.**, recently shot initial tests of the new Rotocolor Minipack camera at Palm Springs for Technicolor which company will make demonstration prints for exhibition early in December.

**CHARLES ROSHER, A.S.C.**, was honored at recent convention of the Photographic Society of America with an award of Associateship in the Society. Henceforth, it will be A.P.S.A. after his name—in addition, of course, to A.S.C.

**TWO PROGRAM** features of especial interest to every A.S.C. member, on schedule for forthcoming meetings of the Society, are Holly Moyse, A.S.C., speaking on subject of latensification and demonstrating the procedure with films, and Harry Lubcke, director of Don Lee television station KTSL who will describe the seven rules for acceptable television film production. Victor Milner, A.S.C. and Fred Jackman, A.S.C., serving on Society's program committee, made the arrangements.

**DUAL PURPOSE** films, geared to be released in theatres and via television, probably will not become the big trend expected, according to William Lasky, until recently photographing his short subjects for distribution to both outlets. The major studios who buy his product have reportedly turned down any and all dual-purpose films. Henceforth his productions will undergo separate filming treatment for each medium.



GEORGES BENOIT, A.S.C., film exhibitor.

**LUCIEN ANDRIOT, A.S.C.**, while en route to Morocco where he photographed background and atmosphere shots for "Outpost Morocco," reports having encountered Georges Benoit, A.S.C., in Salon de Provence, a small suburb of Marseilles, France. Benoit now owns a small motion picture theatre there and was showing "For Whom the Bell Tolls."

Andriot had 8 cameras on this special assignment: 2 Mitchells which he brought from the U. S., and 5 DeBries and one Eclair which he picked up in Paris. His camera crew consisted of eight men. The Eclair camera, he reports, is something new in hand held cameras, on the order of Bell & Howell's Eyemo, but with many radically new innovations.



## ... television and cinematography

NO GROUP of men in Hollywood has watched the development of television in recent months with greater interest than the cinematographers. Uppermost in their minds has been the one question: "Will television cut into the production of motion pictures?"

Perhaps the most optimistic note yet sounded for these men was Joel Murcott's statement in a recent issue of the *Hollywood Reporter* in which it was claimed that television producers returning to Hollywood from the east, where they sampled television fare there, are of the opinion that motion picture people are sorely needed in the medium and will find a whole-sale market for their services as soon as video interests can offer them enough money to make it interesting.

"Major crying need of the moment," Murcott stated, "is for experienced motion picture cameramen and directors. At present several cameras may be used on a production for television, the lensmen using them only for the purpose of switching viewpoint. The cameras are seldom, if ever, switched for the purpose of highlighting dramatic values . . . ABC and CBS tele execs have openly expressed their desire to hire filmites as soon as income warrants, not only for technical posts, but also for executive positions in production and programming."

Unquestionably Hollywood's directors of photography with long years of training, studio experience and photographic skills could contribute considerably toward lifting the quality of television shows. It is logical to assume, therefore, that television—rather than jeopardizing their future—holds great promise for many motion picture cameramen.



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# Cinematographer

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### ON THE COVER

JACK CARDIFF, A.S.C., (extreme right) tries something new in moving camera shots for the J. Arthur Rank production, "The Red Shoes," filmed at Pinewood Studios, London. To produce visual effect of diversified images whirling and fading as in a dream, Cardiff had his camera mounted on a wooden frame and suspended from overhead by heavy elastic ropes. Thus mounted, the camera was virtually "bounced" up and down, tilted, swung from side to side or moved in and out to achieve the unusually weird effect—a photographic highlight of the picture.

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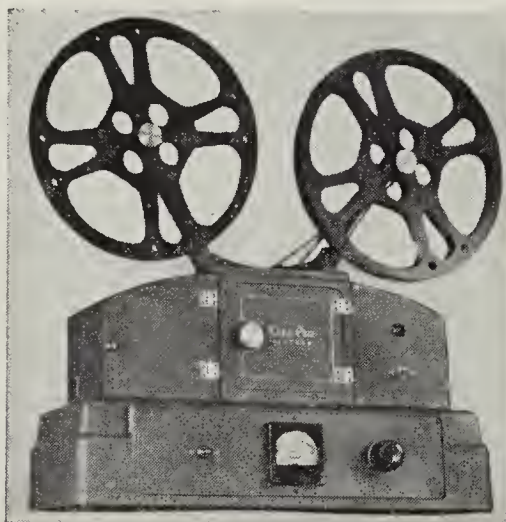
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# Current Assignments of A.S.C. Members



Major film productions on which members of the American Society of Cinematographers were engaged as directors of photography during the past month.

## Allied Artists

- HARRY NEUMANN, "Stampede," with Rod Cameron, Gail Storm, Johnny Mack Brown. Lesley Selander, director.
- CARL STRUSS, "Bad Boy," with Lloyd Nolan, Jane Wyatt, James Gleason. Kurt Neuman, director.

## Columbia

- REX WIMPY, "Laramie," with Charles Starrett and Smiley Burnett. Ray Nazarro, director.
- CHARLES LAWTON, "The Doolin Gang," (subsequently changed to "Wild Bill Doolin"), with Randolph Scott, George MacReady and John Ireland. Gordon Douglas, director.
- ARCHIE STOUT, "Bonanza!" with Glenn Ford, Ida Lupino and Edgar Buchanan. George Marshall, director.
- HENRY FREULICH, "The Devil's Henchmen," with Warner Baxter and Mary Beth Hughes. Seymour Friedman, director.
- IRA H. MORGAN, "The Mutineers," starring Jon Hall and Adele Jergens. Jean Yarbrough, director.
- WILLIAM E. SNYDER, "Jolson Sings Again," (Technicolor) with Larry Parks, Barbara Hale and William Demerest. Henry Levin, director.
- VINCENT FARRAR, "Home In San Antone," with Roy Acuff, Smoky Mtn. Boys and June Wallace. Ray Nazarro, director.

## Independent

- STANLEY CORTEZ, "The Man on the Eiffel Tower," (Allen & Tone) (Shooting in Paris on Ansco Color) with Charles Laughton, Franchot Tone, Burgess Meredith, et al. Irving Allen, director.
- LEE GARMES, "Roseanna McCoy," (Goldwyn-RKO) with Farley Granger and Joan Evans. Irving Reis, director.
- GILBERT WARRENTON, "Counsellor At Law," (Cinecolor) (Equity-E.L.) with Jim Bannon and Nancy Gates. Lou Collins, director.
- WINTON HOCH, "She Wore A Yellow Ribbon," (Technicolor) (Argosy) with John Wayne and Joanne Dru. John Ford, director.
- FRANK PLANER, "Champion," (Screen Plays) with Kirk Douglas and Marilyn Maxwell. Mark Robson, director.

## M-G-M

- HARRY STRADLING, "Barkleys of Broadway," (Technicolor) with Fred Astair, Ginger Rogers and Oscar Levant. Charles Walters, director.
- GEORGE FOLSEY, "The Great Sinner," with Gregory Peck and Ava Gardner. Robert Siodmak, director.
- RAY JUNE, "The Secret Garden," with Margaret O'Brien and Dean Stockwell. Fred M. Wilcox, director.
- HAL ROSSON, "The Stratton Story," with James Stewart and June Allyson. Sam Wood, director.
- CHARLES ROSHER, "Neptune's Daughter," (Technicolor) with Red Skelton and Esther Williams. Edward Buzzell, director.
- HARRY STRADLING, "In The Good Old Summer Time," (Technicolor) with Judy Garland and Van Johnson. Robert Z. Leonard, director.

## Monogram

- HARRY C. NEUMANN, "Crashing Through,"

with Whip Wilson and Christine Larson. Ray Taylor, director.

- WILLIAM A. SICKNER, "Tuna Clipper," with Roddy McDowall and Elena Verdugo. William Beaudine, director.

## Paramount

- GEORGE BARNES, "Samson & Delilah," (Technicolor) with Hedy Lamarr and Victor Mature. Cecil B. DeMille, director.
- LEO TOVER, "Bitter Victory," (Hal Wallis) with Robert Cummings, Elizabeth Scott and Diana Lynn. William Dieterle, director.
- CHARLES B. LANG, JR., "Easy Does It," with Bob Hope and Rhonda Fleming. Alexander Hall, director.
- LIONEL LINDON, "Top O' The Morning," with Bing Crosby, Ann Blyth and Barry Fitzgerald. David Miller, director.
- ERNEST LASZLO, "Manhandled," (Pine-Thomas) with Dorothy Lamour and Sterling Hayden. Lewis R. Foster, director.

## R-K-O

- MILTON KRASNER, "The Set Up," with Robert Ryan and Audrey Totter. Robert Wise, director.
- NICHOLAS MUSURACA, "Stagecoach Kid," with Tim Holt and Jeff Donnell. Lew Landers, director.
- HARRY WILD, "Sam Wynne," with Martha Scott and Jeffrey Lynn. Will Price, director.
- ROBERT DE GRASSE, "It's Only Money," with Frank Sinatra, Jane Russell and Groucho Marx. Irving Cummings, Sr., director.

## 20th Century-Fox

- JOE MACDONALD, "Down To The Sea In Ships," with Richard Widmark, Cecil Kellaway and Dean Stockwell. Henry Hathaway, director.
- LEON SHAMROY, "Prince Of Foxes," (Shooting in Italy) with Tyrone Power, Orson Welles and Wanda Hendrix.
- HARRY JACKSON, "The Beautiful Blonde From Bashful Bend," (Technicolor) with Betty Grable and Cesar Romero. Preston Sturges, director.
- RUSSELL HARLAN, "I Was A Male War Bride," (Shooting In Germany) with Cary Grant and Ann Sheridan. Howard Hawks, director.
- NORBERT BRODINE, "Hard Bargain," with Richard Conte and Valentina Cortese. Jules Dassin, director.
- LLOYD AHERN, "Mr. Belvedere Goes To College," with Clifton Webb and Shirley Temple. Elliott Nugent, director.
- ARTHUR ARLING, "You're My Everything," (Technicolor) with Anne Baxter, Dan Dailey and Anne Revere. Walter Lang, director.

## United Artists

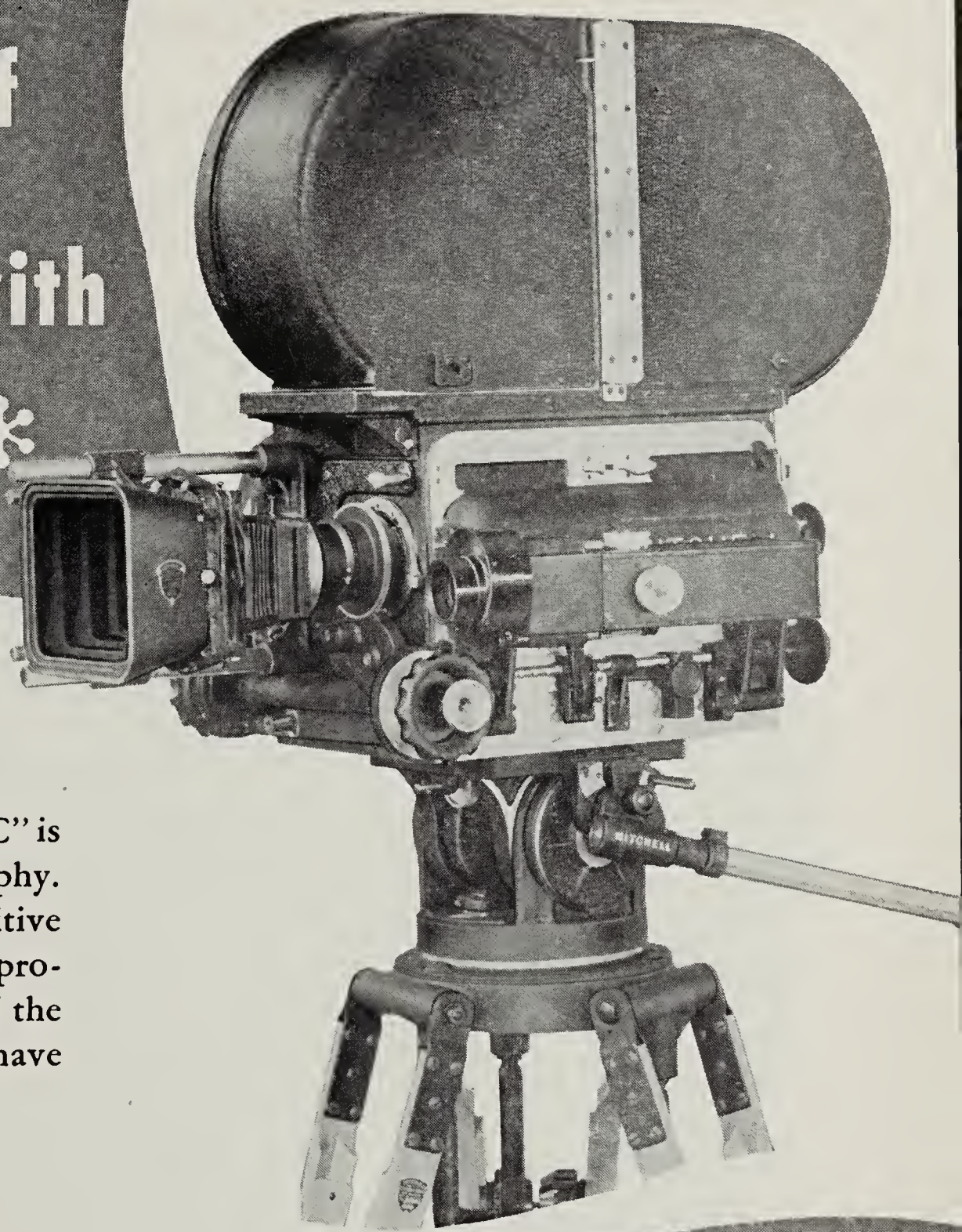
- ERNEST LASZLO, "Impact," (Popkin-U-A) with Brian Donlevy and Ella Raines. Arthur Lubin, director.
- GILBERT WARRENTON, "Dan Patch," (Frank-U.A.) with Dennis O'Keefe and Gail Russell. Joe Newman, director.

(Continued on Page 434)



# The great films of Today are shot with a *Mitchell* \*

The MITCHELL STUDIO MODEL "BNC" is a truly silent camera for sound photography. No blimp is required. Its smooth, positive operation saves many costly hours of production time. Since the introduction of the "BNC," more and more major studios have made it standard equipment.



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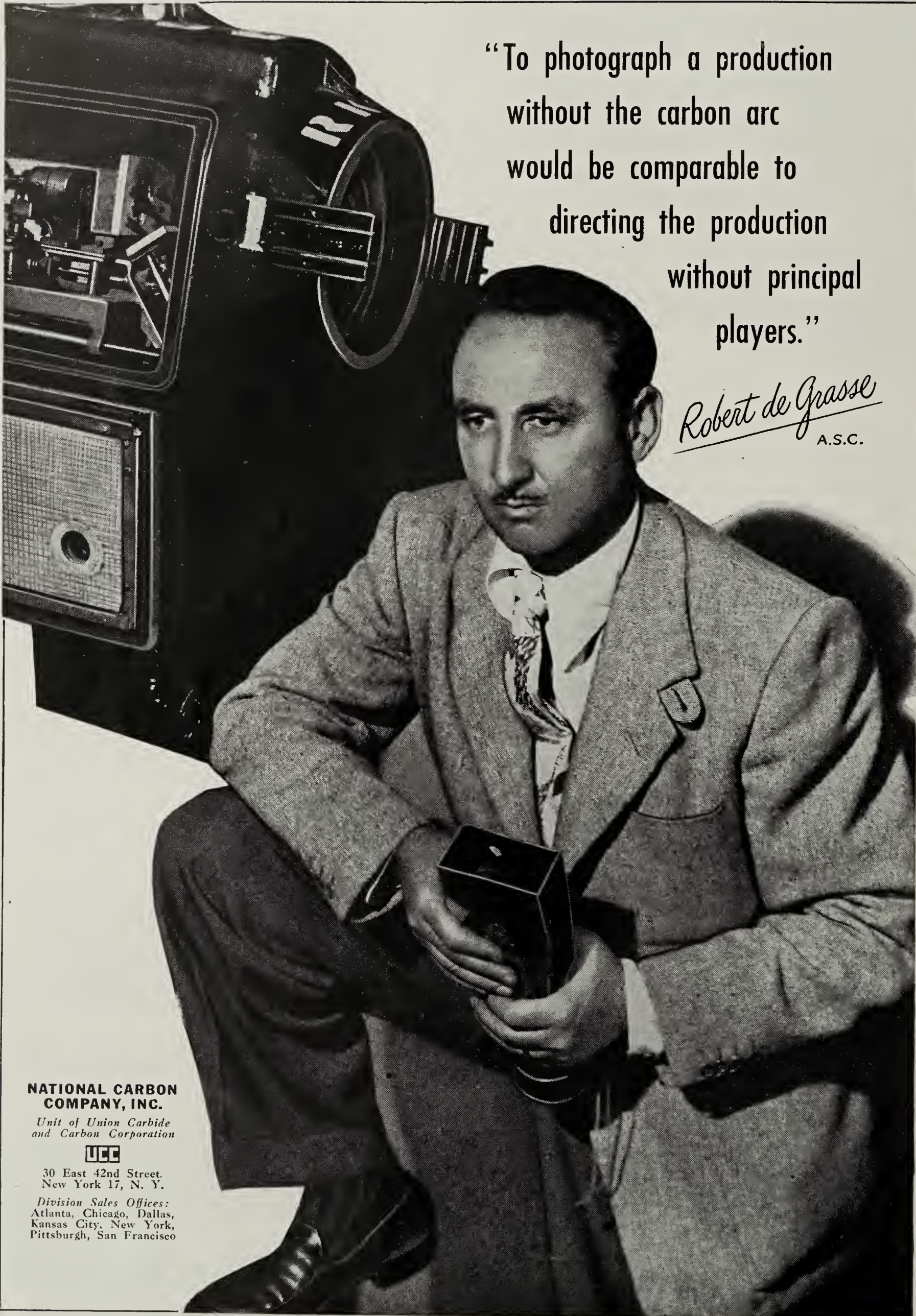
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*Robert de Grasse*  
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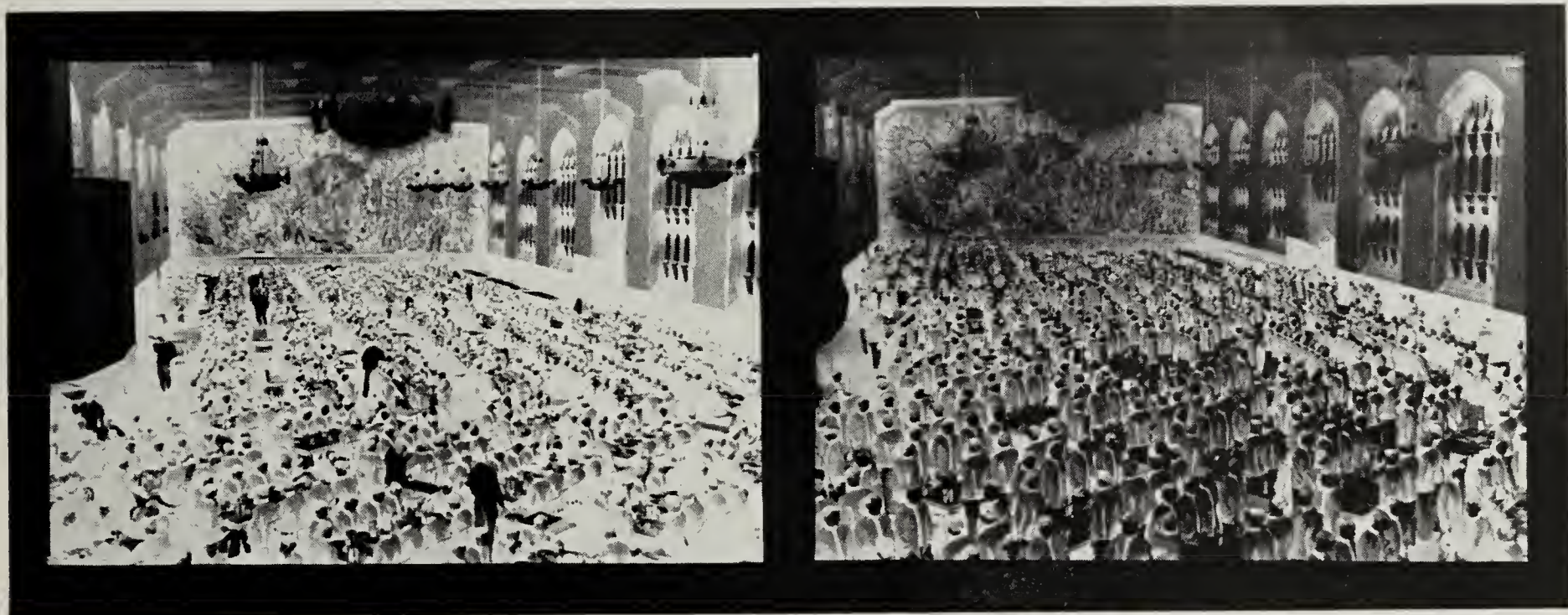
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100 WESTON SPEED

ENLARGED reproductions of 35mm. motion picture negatives which illustrate what can be accomplished by latensification where shooting must be done under extremely adverse lighting conditions. Scene is from Paramount Pictures' "Beyond Glory," filmed in the dining hall at West Point by John Seitz, A.S.C. Illumination was by natural light from

64 WESTON SPEED, LATENSIFIED

windows and the regular lighting fixtures. No studio lights were used. Note increased detail and overall density of the latensified slower negative on right. Both negatives were shot under identical lighting and camera conditions and were developed to the same gamma.

—Photos Courtesy Paramount Pictures, Inc.

The application of the latensification process by Paramount Pictures, Inc., to still and motion picture negatives and by the Cinecolor Corporation to bipack negatives has demonstrated the usefulness of this method of increasing the emulsion speed of negative materials. Two or more of Hollywood's commercial laboratories are now equipping for the process. In effect, it permits the cinematographer, using negative of conventional speed, to switch to one much faster than is commercially available merely by indicating on the camera reports the scenes he wishes treated.

Latensification came to the attention of the industry in general at the time of the Academy's joint award to the Paramount and du Pont organizations at its annual presentations earlier this year. However, there are a number of points in its history during the past ten years which may be of interest to the reader and particularly the A. S. C. membership.

The phenomenon was noted in 1939 by Mr. Robert Cabeen in the course of his work in the du Pont Research Laboratories at Parlin, New Jersey. He was intrigued by the fact that some exposed negative sensitometric strips, which had unintentionally received an extended safelight exposure, showed a very substantial increase in density in the threshold region. He diagnosed the effect as being tied up

(Continued on Page 426)

## Latensification

What it is and how it works in increasing speed of negative emulsions, and its significance in cinematography of the future.

By HOLLIS W. MOYSE, A.S.C.



TWO 2 1/4 X 2 1/4 negatives that illustrate effect of latensification applied to action stills exposed on the set. Negative at left, made at high shutter speed but under normal set lighting conditions, is greatly under-exposed. Nega-

tive at right, exposed under identical conditions, was latensified. It shows clearly the increased shadow detail and emulsion speed achieved by latensification.

—Photos courtesy Paramount Pictures, Inc.





STANDING beside Warner Brothers' first Mobilab unit is E. B. "Mike" McGreal its designer; Ed McClay, camera and still department maintenance man; and Jim Sloan, assistant in charge of equipment. This rugged, double-walled trailer houses practically every convenience and facility found in the studio's camera department on the home lot, and affords more efficient handling of film and cameras on location.

## Mobile Camera Lab

Location work made easier for the cameraman by this miniature camera department on wheels which features laboratory, darkroom and camera servicing facilities.

By WILFRID M. CLINE, A.S.C.

WHEN Robert Burks, A.S.C., and I went aboard the plane carrier, *U.S.S. Antietam*, a few weeks ago to begin shooting initial scenes for Warner Brothers "Task Force," we brought along the new Mobilab Camera Unit developed by E. B. "Mike" McGreal, head of the studio's camera department. The Mobilab, a converted U. S. Navy field trailer, is capable of providing all the facilities of the most de luxe home-studio laboratory and darkroom at distant location sites. Although designed primarily for location work on land, it is ironical that this converted war-time Navy vehicle should begin its new career on location at sea.

Introduction of the Mobilab into location work outmodes previous unwieldy methods, eliminates time-consuming and nuisance chores, and makes possible the application of technical advances never before practical in making motion pictures off the home lot.

The unit itself is a metal two-wheel trailer. The cab is of special duo-shell construction. One shell is housed within the other to provide complete protection against infiltration of dust and light. Also, the double wall construction affords ideal all-weather insulation. Weighing approximately 7000 pounds, when loaded, maximum length of trailer is 22 feet, width is 7 feet 4 inches, and outside height, 8 feet. Interior is divided into two compartments: the forward section is fitted as a laboratory and darkroom, while the after section provides storage for cameras and necessary equipment and affords ample space for assembly of equipment for field or location use. The Mobilab can be transported to any spot where an automobile or truck can travel and be anchored within a few feet of the actual shooting site, if necessary.

In the laboratory section is a stainless steel developing unit for both stills and motion picture test strips, complete with

(Continued on Page 423)



EVERY foot of space within the Mobilab cab has been carefully utilized. Here is a corner devoted to storage of cameras, accessories and tripods.



AMPLE storage space assures a film supply adequate for several days location work. Controlled temperature keeps film properly conditioned.



COMPLETE darkroom facilities enable still photographer to develop and print his films on location, also develop movie film test strips.





DIRECTOR of photography, Nicholas Musuraca, A.S.C., points out the pictorial highlights of a new camera setup to Barbara Bel Geddes, star of RKO's super-Western, "Blood On The Moon." Musuraca's superb mood photography lends this picture an epic sweep, places it far above the usual Western outdoor film.

# Low Key And Lively Action

Nick Musuraca, A.S.C., combines mood photography with gripping outdoor action to enhance visual quality of RKO's "Blood On The Moon."

By HERB A. LIGHTMAN

**"BLOOD ON THE MOON,"** RKO-Radio's super-Western epic now in release, is a study in photographic mood. Filmed by Nicholas Musuraca, A.S.C., it boasts some of the most beautiful and compelling outdoor photography ever to reach the screen. While the acting and direction are also top-notch, it is the visual quality more than any other single element that lifts this film out of the class of the ordinary Western and elevates it to the level of cinematic art.

Director of photography Musuraca, who has become known as RKO's "mood expert," tailored his approach carefully to complement the ominous mood which pervades most of the action. "I studied the script thoroughly until I was able to visualize the principle moods of the story," he explains, "then I sketched out the photographic techniques we would employ to capture those moods on the screen. Each picture (depending upon whether it is a comedy, a drama or a suspense story) requires a different approach. In 'Blood On The Moon' I knew that low-key lighting would play an important part in creating the visual mood demanded by the script."

And so it is that "Blood On The Moon" is primarily a low-key picture, a quality that sets it apart from the usual sun-drenched Western. The plot of the film revolves about two warring cattle factions who spend most of their time stampeding a herd of cattle back and forth across a river. Much of the skullduggery takes place at night, a circumstance that allows for some breath-taking night photography.

The night scenes were shot on location and required 11,000 feet of infra-red film. Using this stock in combination with a 29 red filter, Musuraca captured some spectacular outdoor scenes, characterized by black skies, foamy white clouds and silvery foliage that appears to be bathed in moonlight. The illusion of night is almost perfect, and the effect is highly superior to conventional red-filtered, printed-down sunlight shots photographed on a panchromatic emulsion.

"Infra-red photography is dramatic, but it sometimes makes for headaches, too," Musuraca pointed out. "The cameraman must know exactly what he is doing, or the film may change the color of the players' clothes or tone of make-up. For this reason, infra-red should not be used for close-ups. It is only

practical when shooting long and medium-long shots."

Musuraca's lighting of the interior sequences of the film is unusually dramatic. In one particular sequence, the hero and the villain engage in a knock-down-drag-out brawl in a dimly-lighted saloon. The lighting is extremely low-key, with harsh contrast between highlights and shadows. During the fracas, the players are sharply etched with cross-light in a way that accentuates the masculine force of their action. The result is brutally realistic—an effect that is furthered by an inspired choice of camera angles. A wide-angle lens is used throughout this sequence and the action is played alternately up to and away from the camera in such a way as to make the spectator

*(Continued on Page 424)*



FILMED on location in four different states, "Blood On The Moon" is remarkable for its unusual exterior photography. Especially effective are the night sequences recorded with infra-red film and a No. 29 red filter.





IN THE New York apartment setting, light-weight spots were attached to ceiling beams and moulding to furnish the necessary illumination. The units provided effective source lighting.



THE TINY spots were augmented by M-R midget spots mounted on floor standards. Sheer numbers of units plus skillful placement solved a critical lighting problem.



A LOCAL pet shop, in which important action was staged, proved one of the severest lighting problems. Here cameraman Malkames used M-R spots and portable broads effectively.

## "Jigsaw" Filmed Without Sound Or Sets

How a feature film was photographed in New York without benefit of studio sets, using only natural locations and simplest of portable lighting equipment.

Sound was post-recorded and dubbed in the same as with foreign versions.

By NORMAN KEANE

IF YOU THINK that successful feature films can only be produced in Hollywood where studio facilities leave nothing to be desired by the cinematographer, you will find much to dispute your contentions in "Jigsaw," starring Franchot Tone. The picture was produced in New York City recently without benefit of a single studio set, although most of the action was shot

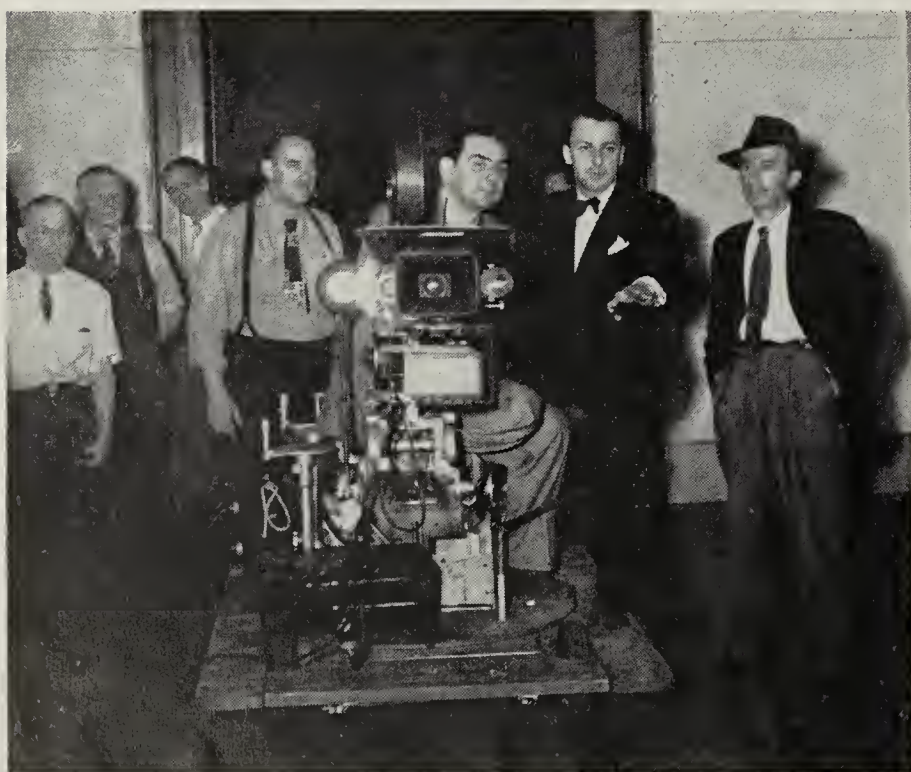
indoors. Photographed by Don Malkames, A.S.C., this production demonstrates that feature films can be photographed in natural settings and locations and have all the lighting quality we have come to expect of studio-produced motion pictures.

Moreover, this full length feature film was photographed entirely without sound—the sound and dialogue being dubbed in later, following the technique developed so successfully for dubbing foreign versions. In fact, the very inspiration for producing the picture had its beginning in Eastern Sound Studios in New York, where owners Harry Lee and Edward Danzinger have for years been dubbing foreign versions for most of the major film distributors. Lee and Danzinger reasoned that with the acceptance of their highly successful method of dubbing for foreign versions, the same method also could be applied to the production of films for domestic use, with a considerable saving in studio costs. And along the same line of thought they also feel that the time has come for wider use of natural settings now that highly efficient, portable lighting units have been developed.

Unlike other pictures filmed on location, "Jigsaw" does not follow the so-called documentary technique. The natural locations were used because they afforded economy in production. Not a single set was built for the entire picture. Even the props were those found on the locations. The sites and locales used included interior of the Brooklyn Museum, a Fifth Avenue pet shop, a prominent night club, its dressing rooms, a large restaurant of unique design, an apartment house interior, elevators, and a warehouse.

Every locale, every "set," was a challenge to Malkames' lighting ingenuity. For one thing, he had none of the luxury lighting equipment of Hollywood studios. He had to get around the limitations of low ceilings of the apartment in which a great

(Continued on Page 427)



IN SHOOTING scenes for "Jigsaw" on natural locations, Don Malkames, A.S.C., had none of the freedom of studio sets where walls may be moved or a crane used for a moving camera shot. Here Malkames (seated behind camera) lines up a dolly shot as director Fletcher Markle outlines the action.



**W**HEN KARL FREUND, A.S.C., begins his next camera assignment at Warner Brothers Studios, he will inaugurate for the first time an improved method of production on the set that will greatly speed up daily schedules and at the same time tend to ease the many complex problems of the director of photography.

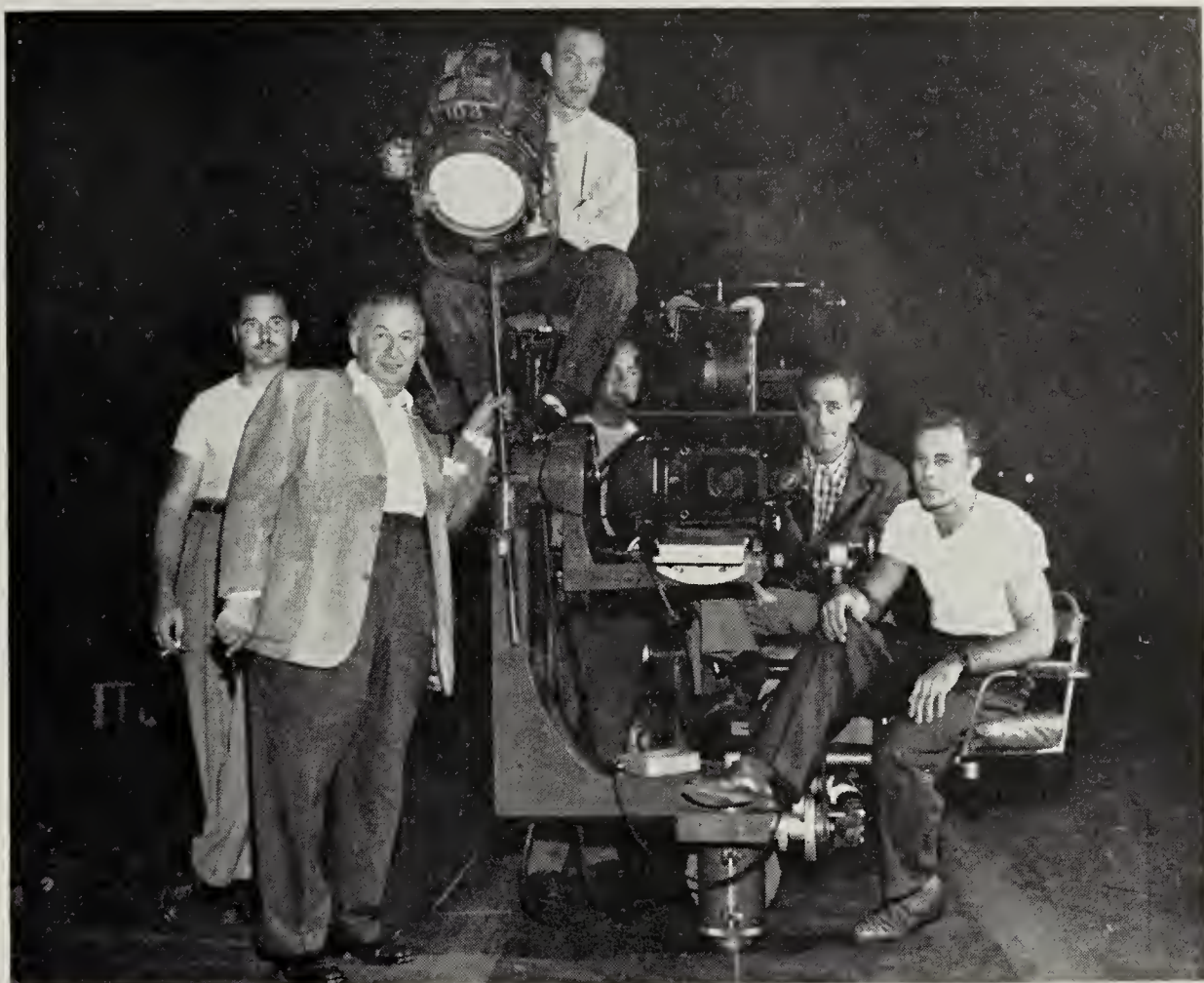
The method, tentatively dubbed "the Karl Freund Contract Lineup System," will put shooting schedules on more of a business basis and save the studio considerable time and money on each production. The savings will come as a result of estimating and contracting each time a new scene is to be lined up.

Here is how the method will work:

Before lining up the camera for the next scene, the director will rehearse the action so the cameraman may observe its scope and plan his lighting accordingly. Position of the players will be marked as a guide to placing the camera. The director, together with the cameraman, gaffer and head grip will discuss the new lineup and estimate the time that will be required to move the camera to the new position, change the lights, erect any necessary parallels, move walls, etc. After the estimate is approved by the director, steps will then be taken to make the necessary changes within the stated time. Say the estimate is 40 minutes. Once o.k'd and accepted, this estimate becomes a "contract" binding upon cameraman, grip and gaffer to effect the changes within the time agreed upon. It also obligates the assistant director to have his players back on the set at the end of the 40 minute period, checked by the hairdresser and makeup man and ready to go before the camera.

The time element of the estimate then becomes a factor guiding all concerned with the production—from grip to star—during the lineup interval. For once, clock watching will be encouraged. Prominent on the set will be a large, portable electric clock operating the same as do clocks on gridiron scoreboards. In other words, the clock will show the number of minutes *remaining* in the lineup interval. As the moving hand of the clock reaches the ten minute mark, a warning bell will ring automatically, calling attention to the time remaining. This will serve the important purpose of calling all players back on the set and especially it will afford them ample time for a final checkup of makeup, hairdress and costume before again facing the camera.

In actual practice, when the clock ticks off the last of the 40 minutes, players will be on the set; set lights will be lit, and the camera ready to roll—unless, of course, something unforeseen occurs to upset the schedule. The director, for instance, after examining the newly completed lineup, may decide that he would rather shoot the scene from a different



**AN UNHARASSED** camera crew is a happier, more efficient crew, believes Karl Freund, A.S.C. (left foreground), who sees in his new contract lineup system a more practical method of completing camera lineups that will show marked savings in production costs.

## Karl Freund Introduces The Contract Lineup System

**Less lost motion and more economy to result from  
system of effecting camera and lighting changes  
based on approved time estimates.**

By RALPH LAWTON

angle. In such case, the cameraman and crew will be credited with one complete lineup—the same as if the scene had been photographed—and a new and different lineup planned, estimated and contracted for.

Essentially, however, this Karl Freund Lineup System will have the effect of eliminating just such time-wasting and cost-consuming delays, because the director and cameraman will discuss the scene and its lighting and photographic requirements more thoroughly before the lineup is attempted. It will behoove the director to more carefully consider the

cameraman's suggestions as regards lighting, composition, etc., and to make comparisons in advance between the cost of an elaborate setup and a less time-consuming one.

Say, for example, that the director indicates a position for the camera that will require adding a ceiling piece to the set and illumination for two windows. The cinematographer, perhaps with a more practical camera eye, may suggest moving the camera five feet to the right or to the left, thereby eliminating need for the ceiling piece and the lighting for one win-

(Continued on Page 428)





THE SPELLEROLLER jacks are rolled against the flat or wild wall. Hooks on the vertical bar engage the two horizontal battens and when the counterbalanced lever is depressed, the wall is easily lifted a few inches off the floor and wheeled off stage.



ONLY ONE MAN is required to operate a jack. Where large walls are to be moved, one or more jacks are used. Regardless how many Spellerollers are employed, the counterweights automatically adjust themselves so that weight on all jacks is equalized.

# MOBILE JACK FOR MOVING WILD WALLS

**Boon to the 16mm. film studio and small independent producer is the "Spelleroller" which makes possible the moving or replacing of flats or wild walls in a matter of seconds, using only one or two men.**

By FREDERICK FOSTER

A SINGLE stagehand in British film studios can now lift and move a flat or wild wall in less time than has heretofore been required by a company of grips or laborers, thanks to the inventive genius of George Speller, chief of construction at Ealing Studios, London.

Easily one of the most effective time-saving devices yet introduced in motion picture studios, the gadget, known as the "Spelleroller," is now being used in at least six British studios, according to *Film Industry*, British studio trade paper.

The small independent studio in this country and especially the 16mm. industrial film studios, where both stage space and manpower are invariably limited, will undoubtedly find the Spelleroller timely as well as time-saving.

Determined to overcome the difficulties of moving scenery to the set and from one part of the set to another, Speller started

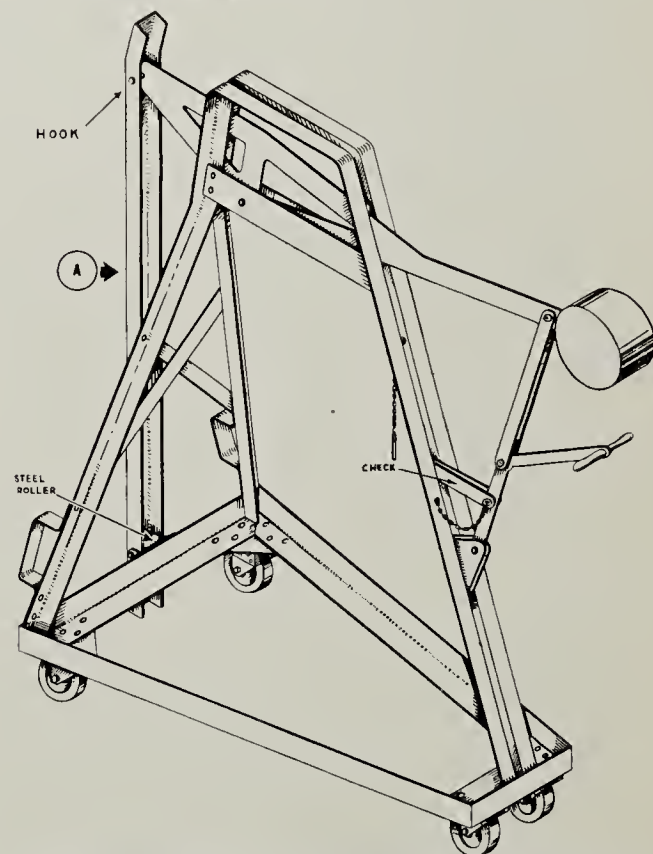
to tackle the task about two years ago. He had his blueprints and full scale working model completed a year ago, and the first Spellerollers were put into practical use on the stages of Ealing Studios last November.

The success of the Spelleroller was immediate. It was soon found that a wild wall, which at one time would have taken eight men something like ten minutes to move into position, could be wheeled in on the set by two men in fifteen seconds, using the Spelleroller, and in addition the time required for fitting sets together and dismantling them was considerably reduced.

Eight "rollers" or jacks, as they are sometimes called, are now in use at Ealing, and twenty-two have so far been sold to other studios. They are now in use at Denham, Pinewood, Highbury, Welwyn and at the A.B.P.C. studios at Elstree.

"I went along to see them in action," writes a *Film Industry* correspondent, "and before I had even spoken to Mr. Speller about them I had an example of their efficiency. We were on stage 3B. The scene was the bedroom in which some of the most dramatic action of the picture takes place. The scene finished, a 36-foot flat had to be moved. It was out of the way in a matter of moments, moved by the standby men. Three Spellerollers were hooked onto the flat and the long section of wall was wheeled from the set with almost unbelievable ease."

(Continued on Page 430)



THE SPELLEROLLER is constructed of channel steel and fitted with 4 swivel casters. The vertical bar "A" is fitted with a hook at top and bottom which engages battens on walls or flats. When the operating lever is depressed, this bar rises vertically to lift flat off the floor.



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Its extremely accurate framing and registration, together with the critical focusing system, make it particularly suited for animation. An animation motor is available.

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## Banish The Shadows

**How to make and use reflectors which enable you to put sunlight anywhere in a scene, eliminate shadows and generally improve your photography.**

By ARTHUR ROWAN

**T**HE FIRST time you use a reflector in shooting movies out of doors, you will have taken a big step toward giving your photography professional quality. Despite clear sunshine and an attractive subject or setting, it isn't always possible to get satisfactory lighting unless you employ some means for reflecting sunlight where it fails normally to reach your subject. Where a broadbrimmed hat casts a deep shadow to obscure subject's face or where subject stands in partial shade, a reflector will do wonders in throwing light into the scene to effect an acceptable exposure.

Few exterior shots are ever made by professional cinematographers without the assistance of either one of two aids for augmenting sunlight—reflectors or booster lights. The latter are simply big studio lamps moved out of doors and used to project strong artificial light into the scene. The first—the reflectors—are large panels of plywood, perhaps 4 by 5 feet in size, coated on one side with aluminum paint and on the other



**TODAY**, the professional cinematographer uses reflectors on nearly all exteriors. Here, filming in a shaded location is made easier by use of reflectors which direct sunlight into the shadow side of the scene, balancing the lighting.

with silver leaf or aluminum foil. The painted surface throws a soft light while the surface covered with silver leaf or foil is used when stronger reflected light is desired.

Reflectors have been used since the early days of silent pictures and are essentially the same as when first placed in use years ago. The method of using them, however, has advanced. Today, the Hollywood cinematographer mounts many of his reflectors on standards which enables him to direct reflected light from a higher and more natural angle. Sunlight, even when the sun is low, comes from overhead; therefore reflected sunlight should fall upon the scene from above rather than from ground level. Reflectors are now used at ground level only when special lighting effects are desired.

Reflectors are standard equipment for camera crews shooting western pictures, especially when filming chase scenes. Mounted on sturdy tripods aboard the camera car, reflectors maintain uniform lighting on the mounted players as they gallop alongside or behind the rolling camera car. For such shots, the use of booster lights obviously would be impractical. Where western locations are far removed from the studio, reflectors invariably augment the sun to provide well rounded illumination for exterior sets as well as the players.

Use of reflectors can prove just as important to the amateur movie maker. When carefully used, one can balance outdoor lighting to effect the most professional-like exposures. In shooting movies in the garden of the baby or other members of the family, placing a reflector to one side so it faces the sun and then adjusting the angle to throw light toward the shadow side of your subject, will result in tremendous improvement in your movies, whether color or black and white.

(Continued on Page 428)



**EXAMPLE** of good use of reflector to lighten subject's features when photographed against the sun. By using reflectors, you can photograph your subjects in almost any outdoor location and facing any direction you desire. The reflected light will void unwanted shadows.





THE SOURCE illumination in this scene supposedly comes from the lamp on the table. A junior spotlight covered with a straw-colored gelatin (left) simulates that source. In the foreground, part of a balustrade with a light behind it is set up to cast a vague pattern on the background and thus break up the expanse of bare wall.

# Special Effects Lighting For Commercial Films

**16mm. industrial films often demand more effect lighting than entertainment films in order to lend greater visual impact to the product or service the films aim to exploit.**

By CHARLES LORING

THE FUNCTION of special effects lighting in the 16mm. commercial film is not to achieve results that are tricky or consciously "arty," but to add greater realism and drama to the presentation of the idea, service or product which the client wishes to sell to the audience.

The more effective commercial films are veering sharply away from the stereotyped "business film" approach and are concentrating more definitely upon realistic human interest situations. To the technician, this means that sunlight coming through a window in the scene must look like sunlight, that firelight from an open fireplace must flicker realistically upon the faces of the characters who are

shown toasting the client's marshmallows, and that when table or floor lamps are shown as the source of light in the scene, the players must appear to be lighted by those lamps.

The first rule to be observed is that special effect lighting should never call attention to itself. Even in the more extreme cases which we shall discuss, the lighting should always be subordinated to the action in such a way that it adds to that action, but never overwhelms it.

Let us consider first the use of lamps or other lighting units which are shown in the scene as apparent light sources. These units are known as "practicals" and we include them in our discussion of

special effects because they require more precise handling than off-screen units used for photographic illumination.

A lamp shown in the scene must give the illusion of being the source from which the players and set are lighted. It must therefore be brighter than anything which it illuminates. In order to achieve this effect, ordinary light bulbs are usually replaced with No. 2 Photofloods, and a sufficiently dark lampshade is used so that the photoflood will not "burn up" that area of the screen. Spotlights used for actual illumination must be placed so that they simulate the direction and quality of the light that would normally be given off by the lamp shown. Also, these spotlights should be located in such a way that the closer the players approach the lamp, the more brightly illuminated they will be.

Under the subject of special effects lighting we must consider a style of set illumination known as area lighting. As the name implies, this is the type of lighting set-up in which only selected areas or planes of the set are illuminated, the rest being allowed to fall off into darkness. This style is much more widely used in the photoplay than in the commercial feature, but it has its applications in sequences that demand unusual mood or harsh realism. The important thing to remember is that the light falling on the illuminated areas should seem to be coming from a logical source, such as moonlight coming in a window, lamps supposedly situated in another room, etc.

Projected shadows create effects which can be a great boon to the commercial cameraman, since they not only add greater realism to the scene, but can sometimes be used to simulate the atmosphere of large and unusual settings. For example, let us suppose that the script calls for an office setting. The set is dressed with appropriate furniture and props authentic in every detail, but somehow the illusion of a real office is still lacking. In order to add the needed touch, the cameraman sets up a large venetian blind just out of camera range and shines a junior and senior spotlight through it. The horizontal shadow pattern projected on the wall then completes the illusion of an office high up in a building with sunlight coming through the windows.

Sometimes a cleverly executed shadow pattern can create the illusion of a whole set. For example, a church can be suggested by projecting a Gothic window (cut out of cardboard) onto a bare wall in the background. Other types of sets might be suggested by projecting cut-outs of various types of windows, prison bars, grillwork, etc.

Sunlight and moonlight effects require special set-ups which are routine in the studios, but which may seem tricky to the commercial cameraman at first. Sunlight

(Continued on Page 430)



**INDOOR LIGHTING EQUIPMENT** Here's a gift that will find excellent use the very first thing Christmas morning. Kodak Vari-Beam Clamp-light, its teammate, the Vari-Beam Standlight, and two photofloods provide all the lighting equipment needed for wonderful indoor movies. \$25.43 buys the whole outfit, lamps and all. The twin-reflector Kodasector—at only \$8—is an inexpensive and capable alternate.

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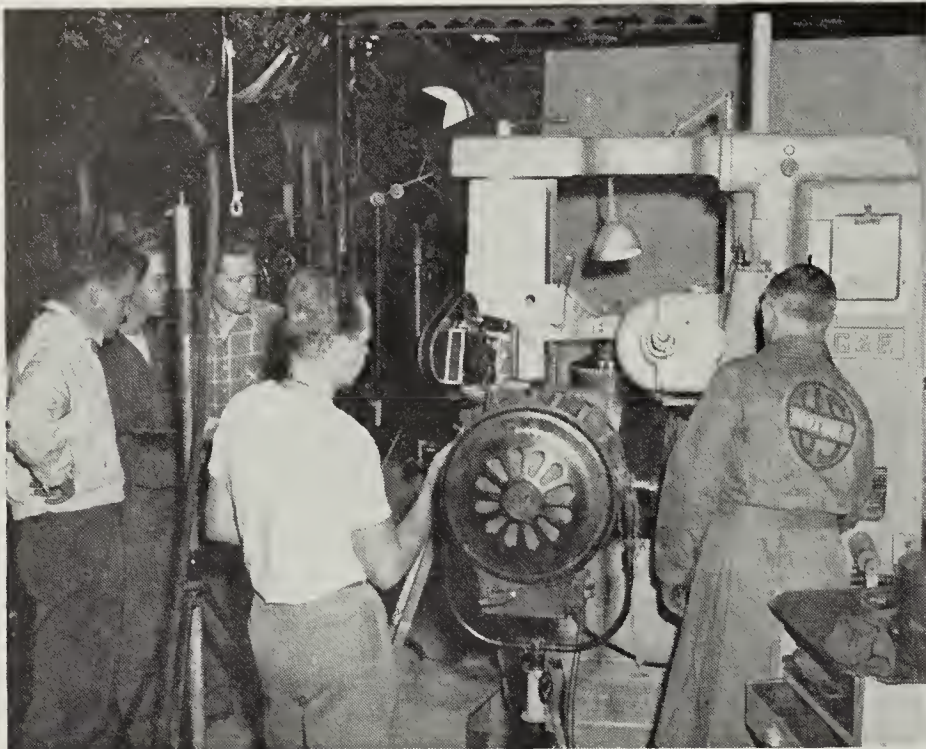
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BACKGROUNDS are ever a problem in shooting industrial films on location. Here cameraman Higgins meets the situation with painted plywood flats placed behind machine being photographed.



SKILLFUL lighting enabled Higgins to photograph this display of miniature motor models so they appear as the real thing on the screen. Effect was heightened by slow dolly shot.

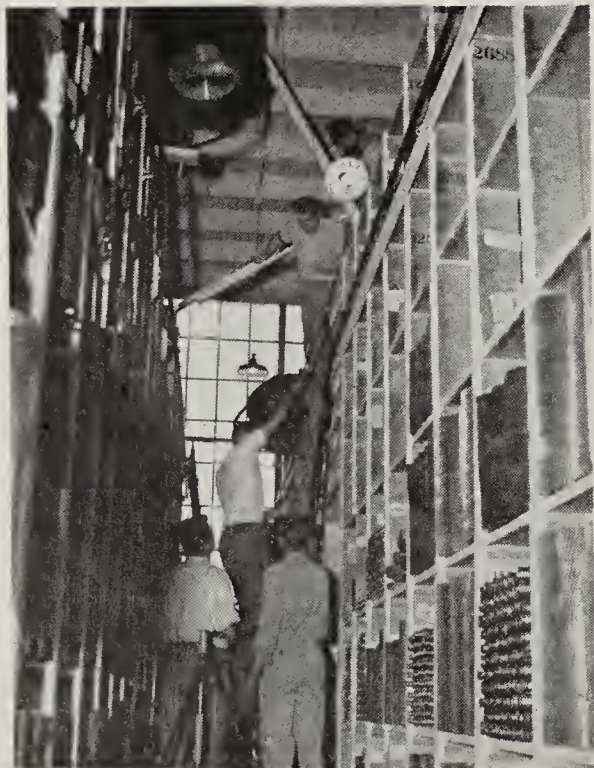
## Glamourizing Nuts And Bolts

TO THE 16MM. cameraman, a "nuts and bolts" picture is one of those industrial "trip through the plant" or mechanical instruction films. It may be very interesting as to subject matter, but often can be dull as well as difficult photographically. The average factory with its assortment of hobbing machines and grinders, punch presses and lathes, all painted in various shades of dull grey

**Unique lighting and skillful use of color add pictorial interest to 16mm. industrial film that shows how motors are made.**

By ALFRED HIGGINS

*Chief Cinematographer, Rockett Pictures, Inc.*



TYPICAL of location problems encountered by the cameraman in shooting within the motor factory was this narrow stockroom corridor. To accent depth, scene was lit on several planes and camera lens stopped down to gain sharp focus from foreground to background.

and black, do not offer much in the way of pictorial interest. As if this weren't uninspiring enough, the cameraman is also limited as to his compositions. The possibilities for striking angles are lessened because the set-ups must not be chosen for the best artistic effect, but to most effectively show the operation of each machine.

When Rockett Pictures, Inc., was asked to make a film for U. S. Motors, we resolved that this would not be just another factory movie. From the very beginning it was felt that the story should not only be well told, but should be pictorially interesting as well. Director J. Richard Westen and writer Daniel Downer were keenly aware of this, and throughout the preliminary planning we explored all possibilities for adding to the picture's visual appeal.

Backgrounds are the major stumbling blocks in shooting within the average factory. Lighting each machine is relatively easy: it's the background—the background that stretches out for half a block. It would take the resources of a

major studio to illuminate the vast expanse, so the usual procedure is to light the foreground and let the rest fall into abysmal blackness. On the U. S. Motors' picture, in order to block out undesirable backgrounds and to add a warm tone to the colorless subject matter, five flats were painted a pleasing tan shade and used as portable backings. These could be moved from one location to another and used singly or together to effectively solve the problem of underlit backgrounds.

One of the nicest shots in the picture was the easiest to shoot. The script called for a scene of a red hot gear being removed from a molten salt bath. It was found that when using enough light for a normal exposure, the redness of the gear completely disappeared and photographed as black. To overcome this, the set was lit about two stops below  $f/1.9$  exposure and all light "goboed" off the gear and the glowing salt bath. This low key lighting gave just enough detail to outline the workman, but allowed the points of interest to register in their true color. The glowing redness of the gear



against a very dark background had a dramatic quality that would have been lost had it been photographed normally.

There were many scenes that called for close-ups of various types of gears. To avoid a static quality we used a variety of techniques to enhance what could have been a series of drab shots. The gears—especially cadmium plated for the picture—were photographed against red, blue, and green backings. The bright silver against these vibrant hues provided striking color combinations. For one close-up, a large gear and pinion were mounted on a motor driven turntable. One light was placed low and to the front so as to cast shadows of the gears on the background, while another light with deep red gelatin was used as a three-quarter backlight. As the turntable revolved, the bright red light flashed on the shiny surface of the gears and then onto the rotating shadow. The same turntable was also utilized in another way. Several gears were placed at intervals around the circumference and the camera lined up for a low angle so that as each gear came forward it completely filled the screen. Those in the background were left in silhouette against a colored backing, but became fully lighted as they moved up to full screen. These scenes took time to arrange, but the results were well worth it.

To illustrate the workings of an electrical motor, it was necessary to photograph a model. This model consisted of cadmium plated gears in lucite mounts all of which stood out very nicely when photographed against a maroon burlap backdrop. The loose weave of the burlap registered beautifully on film and the texture is apparent at considerable distance. To give movement, the model was revolved while the camera dollyed from a full shot into a closeup of the part to be emphasized. In other scenes, we dimmed the lights on one section while bringing up the lights on another part to point up various features of the motor. By using camera movement and lighting, these sequences were never allowed to become static.

In one of their advertising campaigns, U. S. Motors made up some small plastic dummy motors about three inches long. A shot was made of these that proved so effective it was used for the fade-out scene. Sixty of these miniatures were lined up in several rows and the camera, mounted on a dolly, was pointed straight down on them. At the beginning of the shot, the camera is centered on about six. We then pulled upwards until all of the motors filled the screen, giving the impression of a huge warehouse display of real motors.

The opening scene in the picture shows an industrial designer seated at a drawing board working on a blueprint. To tie the titles in with this first shot, they were lettered on blueprint paper. The first one

# “PROFESSIONAL JUNIOR” CAMERA EQUIPMENT

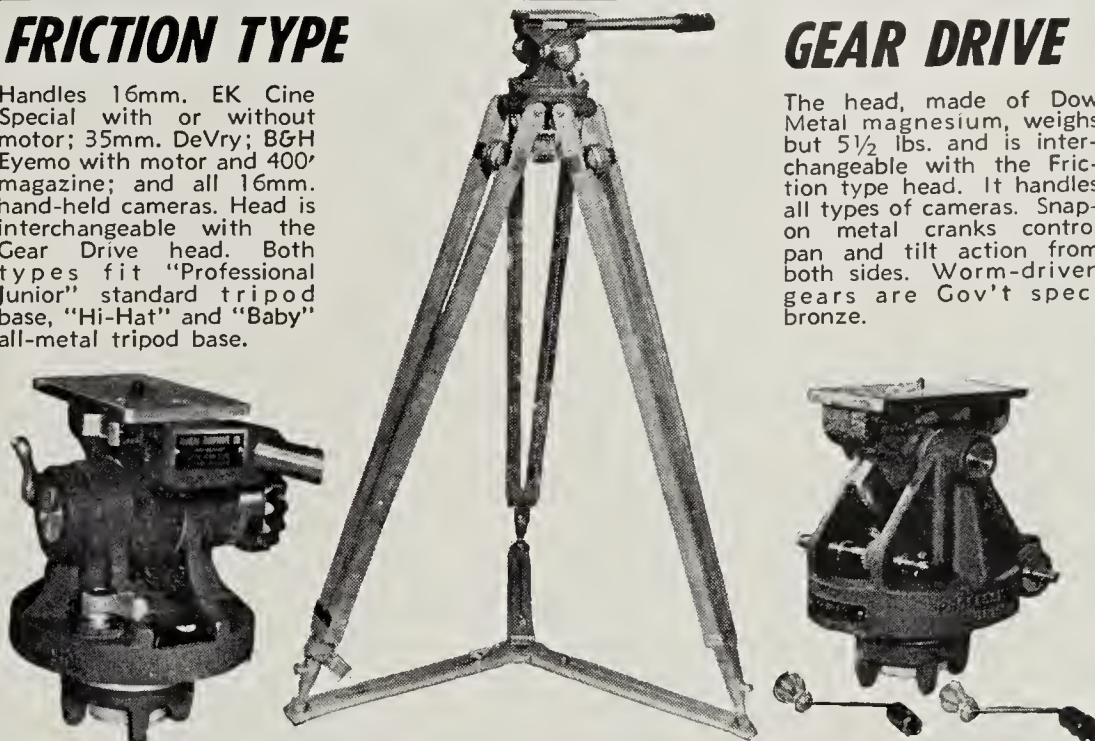
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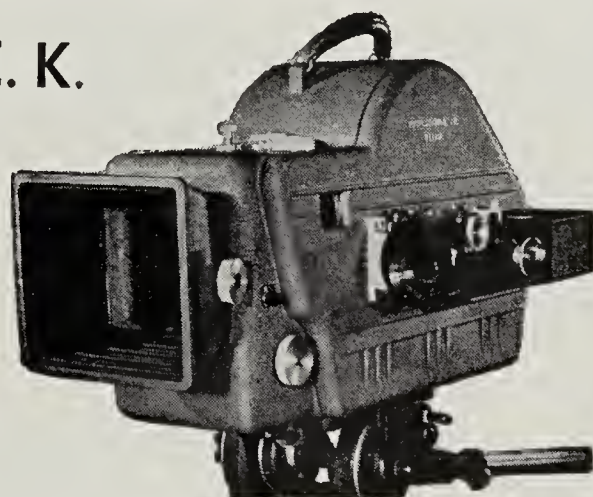
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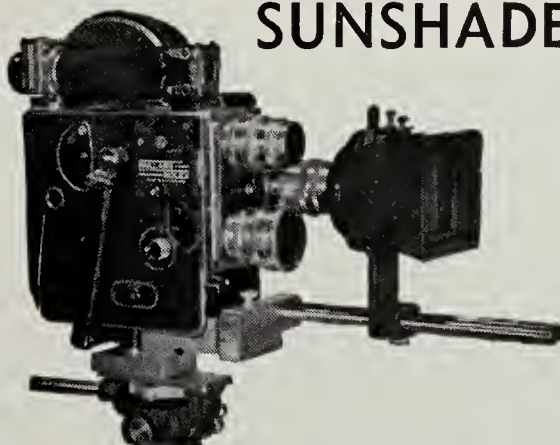
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is of the motor. This is then rolled back to disclose the presentation title. Each title was handled in this manner and the idea carried through into the picture. As our story concerned the designing and manufacture of these motors, an opening of this type keyed the entire picture.

The conditions under which industrial pictures are made run from one extreme to another. Our major problem was solved when we used flats for backgrounds; however, the most difficult shot was of a cramped shelf-lined corridor filled with gears stacked almost to the ceiling. Lighting this long, narrow set meant hoisting six 5000 watt seniors to the rafters. Two more seniors were used near the camera which served as "fill" lights. In order to lend a feeling of depth, the scene was lit with several planes of light. High intensity illumination was necessary so that the lens could be stopped down enough to carry focus, as the script called for both foreground and background action.

Commercial Kodachrome film was used throughout the production and it proved ideal because of its wide latitude. Those scenes showing bright shiny gears mounted in black machinery, recorded faithfully. Even with this extreme contrast, the highlights did not "wash out" and there was surprising detail in the blackest machine. Lighting equipment for the factory shooting consisted of eight seniors, several juniors and numerous No. 4 photofloods. When it was necessary to mix daylight and artificial light, McBeths were used to control the color balance.

What could have been a routine picture turned out to be an interesting assignment. Through careful preliminary planning and imaginative shooting, we added much to the pictorial interest of this "nuts and bolts" industrial film.

## MOBILE CAMERA LAB

(Continued from Page 410)

thermostatic heat control and electric refrigeration; also safelights, timing clock, and all the necessary accessories usually found in a modern darkroom. There are contact printers for both 4-by-5 and 8-by-10 still pictures; an enlarger and printer for motion picture film; and air blowers for drying. The film loading board and film storage for both raw and exposed stock are fitted across one end.

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Careful cleaning and inspection of cameras is more important on location

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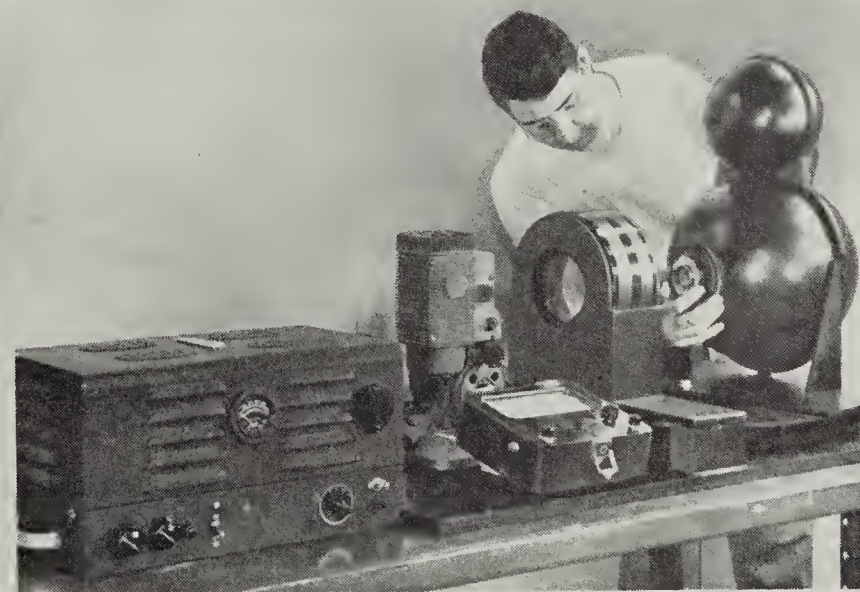
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**A SECTION OF** discarded fluorescent lighting tube plus a length of broom stick make an ideal quick developing outfit for processing short lengths of test or title films. Secure film to end of stick with thumb tack, run it parallel with stick and secure at other end with another thumb tack. Fill tube  $\frac{1}{3}$  full of developing solution and insert film and stick.

**EDITING AND REWIND** boards that jiggle about while you work can be made secure by fastening four rubber suction cups to the under side—one at each corner.

**TO MAKE SMOOTH SCROLL** titles, use wringer of the family washing machine to move the title strip before your camera. Insert top of strip between rollers, set up and focus camera, then start motor and run camera until entire title has been photographed. To keep title strip taut, attach weight to bottom.

**TO SPEED UP COMPOSITION** of titles where block letters are used, cut a number of slots same height as letters in a 10" X 14" sheet of cardboard. This forms a template or guide for your lettering. Arrange letters in the slots. When title is completed, lift template and photograph title.

**TO PROTECT FINISH** of your camera tripod, make a simple carrying case of canvas with an opening at one end. Finish with a draw-string closure or fit a standard zipper closure, obtainable from any dime store. Insert tripod and determine position for adding a carrying handle. This should be located on the long side and at a point where the tripod is in balance. Make handle of a strip of canvas, folded and stitched to add strength.

**TO MAKE TITLES WITH** moving backgrounds, mount block letters forming title text on a clear panel of glass. Erect glass before the camera at a distance that will insure sharp focus for lettering. To bring background into sharp focus also, shoot title at smallest aperture possible. Mounting title letters on glass in door or window of your automobile will solve the problem of mounting the glass before the camera.

**SHOOT A FEW FEET** of a paint maker's sample card, using Kodachrome or Ansco Color film, if you wish to check the color reproduction qualities of your camera lens. Compare the screen results with original colors on the card.

than when cameras are used in the comparatively dust free air of the studio stages and for this, special equipment is provided in the Mobilab. A special compartment opens from the outside and provides a working bench for camera inspection. There are two 2000-pound tanks of compressed dry air for cleaning purposes as well as a vacuum unit for removing dust particles from interior of cameras.

The storage compartment of the Mobilab is designed to accommodate four standard Mitchell motion picture cameras, their necessary accessories, and complete still photographic equipment. Locking metal racks hold the equipment securely in position for traveling. Delicate parts and camera lenses ride on sponge rubber mats that absorb vibration. Any camera equipment that ordinarily would be available at the studio is made easily accessible to the camera crew on the location site.

For electric power, the unit is equipped to plug into any A.C. current source. Five hundred feet of cable is carried for this purpose. Where an A.C. power line is not available on location, 110-v A.C. current may be supplied by the Mobilab's own gas-motor generator. A fifty-gallon storage tank affords an adequate supply of water when on remote locations where running water is not immediately available. And finally, the entire Mobilab unit is air-conditioned. Film is thus stored under proper temperature at all times.

The Mobilab also saw "dry land" location service for the first time recently when it was taken on a location site 260 miles from the home studio in Burbank for exteriors for "The Fountainhead." Reports submitted by the unit manager as well as the cameraman and his crew attest to the unit's ability to revolutionize the camera department's work on location, making for convenience and higher quality work. This might appear an overstatement, unless the unit is contrasted against the methods previously followed in fulfilling its functions.

Heretofore, camera equipment for location work was loaded on a truck for transportation from the studio to the location base of operations. More often than not, it was then necessary to further transport the equipment from the base to the actual shooting site each morning, then bring it back at night. Makeshift darkrooms were secured or contrived at the location base. There, after the company finished the day's shooting, the assistant cameraman unloaded the exposed film from the magazines and canned it, reloaded the magazines with raw film sufficient for the next day's shooting, and serviced his cameras. These operations added at least three hours work to his already work-crowded day, in addition to the two hours usually put in transporting camera, film and equipment from the base to the location site. Similarly, on a lesser scale, the still cameraman required two additional work-

ing hours to handle his film and cameras.

For emergency magazine loadings at the location site, the cameraman was provided with a light-proof changing bag. For making film tests, he had to use a test box. His big problem was to keep his developing solutions at the required 68 degrees temperature. Naturally, he had no drying or printing facilities, nor any adequate means of cleaning his cameras and lenses. Little wonder then that Warner Brothers' cinematographers and their assistants are lauding the Mobilab.

Back in 1940, McGreal—who previously had designed the first camera equipment trailer for use on Warner Brothers' sound stages—had worked out initial plans for a portable film laboratory and complete camera unit for location work. With the outbreak of war, however, execution of the plans was temporarily abandoned because of material and equipment shortages. Subsequently the army and navy developed a similar unit for servicing photographic branches of the services in the field. McGreal's Mobilab camera unit was later developed from one of these secured through war surplus:

All interior fittings of the original were removed and replaced with fittings expressly designed by McGreal for motion picture location work. Now that the first Mobilab has proved its worth in actual use, fittings and equipment are being readied for additional units.

## LOW KEY AND LIVELY ACTION

(Continued from Page 411)

feel that he is right at the scene of the brawl. The camera is down on the floor for most of the action, a vantage point that makes the combatants loom large in the composition.

Much of the action in "Blood On The Moon" was filmed on location in far-flung sectors of the Southwest. The main theatre of action was the fantastically eroded country with its cathedral-like plateaus found in Arizona near the Grand Canyon. Most of the snow sequences were filmed in the Colorado Rockies. The desert locales and some of the mountain scenery were obtained in California and Utah, and the river crossing was shot on the Rio Grande in New Mexico. On the screen, all of this widely scattered scenic splendor combines to suggest one general locality.

"On location," Musuraca observes, "a cameraman often has to change the lighting he has planned in order to adapt his camera to the atmospheric conditions of the locale. Location time is expensive, and a company can't sit idle for hours waiting for a certain kind of cloud to appear. In one exterior sequence, however, we did have to wait until late afternoon to film



a player against a certain kind of cloud-filled sky. This was necessary in order that we might dissolve to a low-key interior without too great a change in visual mood. Our greatest difficulty in outdoor location filming is to match scenes in the same sequence that were shot on two or more different days. Atmospheric conditions are rarely the same from day to day."

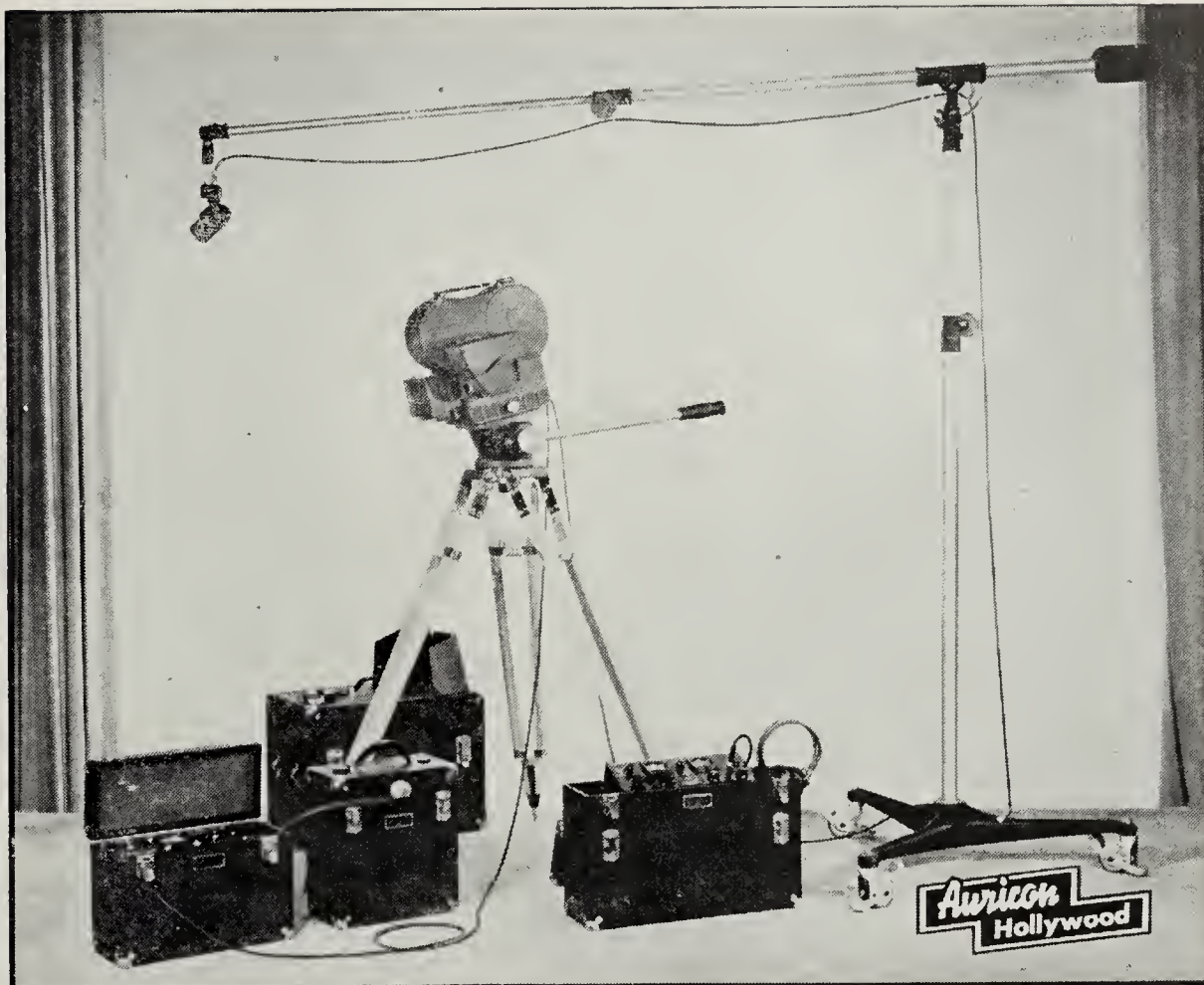
A helicopter owned by the studio proved invaluable throughout the filming of "Blood On The Moon." It was used during the planning stages to scout locations to which no roads led, and later the same helicopter was used as an aerial camera car to film a snowy mountain chase sequence. It also dropped fresh food and water to a movie unit stranded by floods in Monument Valley, Arizona, and it explored feasible routes for the roads which the movie company had to build to reach beautiful but hitherto inaccessible regions. It is estimated that the company built 320 miles of roads (where none had previously existed) in Arizona alone.

The snowbound Colorado location was approached most easily by sledding in the heavy rolling stock, such as sound and generator trucks. One of the most useful pieces of equipment was a giant tank car which could pump and squirt water like a fire engine. It had winches fore and aft wound with steel cables by means of which it pulled even jeeps up otherwise impassable roads. It featured mighty engine drives on all its multiple wheels, a "cat" tread for special kinds of work, and best of all, a bulldozer blade and roller. The latter could be weighted with water in its cylinder from the huge tank. This mechanical monster came from Army surplus, and as its expert driver said, "If it could only cook, I'd have married it a year ago."

Air travel proved the most efficient way to move stars and technicians from one shooting unit to another. Director Robert Wise would shoot all the close and medium shots in a certain locality, and then hop aboard a plane to change companies with an "action director," Arthur Rosson, who would stage the long shots.

Getting the right kind of snow at the right time proved to be a real problem. In the Colorado sequences, the snow had to be unbroken in front of the camera and breast-high on a horse. In the Utah and Arizona snow sequences it had to be light but growing heavier, in order to represent earlier phases of the same storm. Skiers spoiled one location by leaving their tracks on the otherwise virgin snow. The helicopter came in handy in one sequence showing two players on horseback struggling through the snow, because it could hover in front of them and follow their action without leaving tracks, as a conventional camera would have done.

Three herds of cattle in as many different states represented the single herd



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# 25 YEARS AGO

With A. S. C.



And Members

- JACKSON ROSE moved over to Universal City to handle the camera for King Baggott.
- SOL POLITO was shooting the John M. Stahl production, "Why Men Leave Home," on a loanout from Edwin Carewe productions.
- HENRY SHARP recovered from an operation which hospitalized him for a week, and resumed activities as cinematographer for Thomas H. Ince at Culver City.
- IRA MORGAN was handed the cinematographic plum of the year when Cosmopolitan Productions chose him to photograph "Yolanda," an 11-reel costume production. Now with Cosmopolitan three years, Morgan's previous picture was "Little Old New York."
- NORBERT BRODIN was shooting "Black Oxen," Frank Lloyd's first production under his own banner for First National.
- CHARLES VAN ENGER joined the Ernest Lubitsch unit at Warner Brothers studio as director of photography.
- VICTOR MILNER was filming Fred Niblo's production of "Thy Name Is Woman," for Louis B. Mayer.
- JOHN SEITZ, Philip Whitman and James VanTrees were receiving accolades for success of A. S. C.'s fourth annual ball held at Biltmore Hotel, October 27th, 1923. A feature of the event was a mammoth replica of a motion picture camera designed by William C. Menzies and erected on the ballroom floor by members of staff of Pickford-Fairbanks studio.
- JOHN BOYLE, one of the newer members of A. S. C., was enroute to Italy to photograph "Ben Hur" for Goldwyn.
- HENRY SHARP completed the photography for "Anna Christie," Thomas H. Ince production directed by John Griffith Wray.
- CHARLES VAN ENGER was filming "The Marriage Circle" for Warner Brothers. Ernest Lubitsch was directing.
- ROBERT NEWHARD returned from location in the bad lands of Arizona where he filmed scenes for First National's "Sun-down."
- FRED JACKMAN had just completed the directorial chore on "Rex, King Of Wild Horses," and was preparing to direct another. Floyd Jackman handled the photography.
- ARTHUR EDESON was shooting Doug Fairbanks' "Thief Of Bagdad," and replaced Phil Whitman, who was sent to Africa on another assignment, with Kenneth MacLean as his associate cameraman.

portrayed in the story. In renting these cattle for driving in stampede sequences the studio had to agree to feed the animals back to their original weight, no matter how much time or feed this might take. In order to live up to this stipulation, an arrangement was worked out with a rancher who had more grazing land than cattle.

The stampede sequences in the film involve some amazing photography. The camera seems to be right in the midst of the thundering herd most of the time. In one subjective shot, to simulate the point of view of a player about to be trampled to death by the frenzied cattle, the camera is placed on the ground and the hooves come crashing right up into the lens with an almost frightening realism.

"Blood On The Moon" is an example of the important part played by creative cinematography in modern film production. Without the dynamic camera work of Nicholas Musuraca, this might have been "just another Western"—but his dramatic lighting and camera artistry have added force and suspense to the action, making "Blood On The Moon" one of the season's most absorbing outdoor action pictures.

## LATENSIFICATION

(Continued from Page 409)

with the action of the safelight although the strips showed only a very slight increase over normal fog values in the unexposed areas. Tests with post-fogging over a wide range of intensities and exposure times confirmed the diagnosis that a small amount of light, applied over a considerable period, has the effect of intensifying the latent image. Mr. Cabeen, a capable still photographer and at that time a devotee of midget racing, put the process to work by shooting action stills at night on a poorly lit track in the vicinity of his home. He succeeded in getting commercially satisfactory negatives under conditions which his meter indicated would be under-exposed by upwards of two stops.

The word "latensification" was coined to describe the intensifying action on the latent image and the process was called to the public's attention by a brochure containing striking photographic examples. Articles were published in magazines appealing primarily to amateur photographers. Hollywood technical personnel was familiarized with the potentialities of the process but it was not until it was suggested to Dr. C. R. Daily of Paramount that an application was attempted in the motion picture industry.

Starting in late 1946, Paramount applied latensification to production action

stills. The three to four fold speed gain made it possible to obtain sharp, fully-timed negatives during action and to save a day or more of shooting time on each production by completely eliminating the time required for posed stills. Stills shot at the height of dramatic action have been enthusiastically received by national press and magazine services through which Hollywood gains publicity for its product. In comparison, the old method posed stills appear static, stilted, and lacking in pictorial authority.

Early in 1947, Paramount extended the latensification process to the treatment of motion picture negative. Remarkable benefits, both economic and in picture quality, have been obtained on location interiors and night shots. Production has been able to use many desirable locations which otherwise could not have been considered, either because of prohibitive lighting expense or because of restrictions which would have made it impossible to bring in the necessary lighting equipment.

In April, 1948, a complete description of the Paramount development and application of the process was presented by Dr. Daily to the Pacific Coast Section of the Society of Motion Picture Engineers. More recently, Cinecolor's use of the process is reported to have reduced lighting costs to an estimated ten percent above that for black and white.

Cinematographers, particularly those dealing with glass shots or with distant locations, have seen negatives gain in shadow detail when an extended period has intervened between exposure and development. This evidence that the original exposure has affected grains that do not develop when freshly exposed negative is processed helps explain what happens with latensification. The energy from the post-fogging light affects more strongly grains that have a sub-threshold exposure than those which are unexposed. Thus, by the time sufficient post-exposure has been given in order to fog previously unexposed grains, those which received a slight image exposure act as though several fold more light had fallen on them originally. The increase in density in the shadow region lowers the contrast of the picture very noticeably, but is compensated for by increasing development to the extent that the highlights are brought back into normal relationship with the shadows. Some increase in graininess is apparent but is not commercially objectionable on most subject material.

The use of light to activate the negative permits of very accurate control and yields dependable, uniform results. Films from various manufacturers may call for different fogging light intensities and there may be minor differences between emulsions of a given type from one manu-



facturer. However, the experience to date is that all negative materials respond to the treatment and that the optimum handling procedures for each can be readily determined.

The equipment for post-fogging can take a variety of forms but can be visualized as a drybox-like arrangement wherein a negative can be exposed to a weak source of light for a number of minutes as it passes through. It is obvious that the machine has to be designed to handle negatives without putting in scratches, abrasions or pressure marks and to maintain a constant speed. The exposing lights should be variable in intensity but under accurate voltage control at any given intensity. Light filtered by an ordinary green safelight can be used on panchromatic materials, as a matter of convenience, but any color which will fog negative will produce the effect. Some wave lengths may have minor advantages over others but at present this subject has not been extensively explored.

As regards time of exposure, evidence indicates an increase in speed as the fogging time is increased up to an hour or longer. However, exposures longer than five to ten minutes do not give enough additional speed to offset the economic disadvantages.

The amount of fog, produced in a given length of time, influences speed to an appreciable extent. Substantial speed increases can be obtained with no visible fog added to that in unexposed areas. Practical considerations, however, favor the exposure being adjusted so as to produce a fog increase of .05 to .10 over that of an untreated film developed the same length of time.

Latensification, like many another photographic process, had its origin in a chance observation. It could have been missed had there been a less alert, a less inquisitive person involved. The moral is that there are probably other valuable finds to be made in the fascinating field of photography awaiting the persons who will look for the answers behind unusual occurrences.

## "JIGSAW" FILMED

(Continued from Page 412)

deal of the action took place, of the fixed walls of narrow halls and of elevators, and of the immovable fixtures, furniture, etc., which he invariably found in such locations as the pet shop. Before starting to shoot the picture, he had considered using mostly photospot lamps and R-2 photo-floods, but he found that even after building a number of barn doors and hangers for use with these lights, they would not give the precise lighting control neces-

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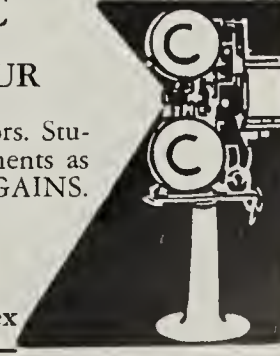
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sary. So he standardized on Mole-Richardson midget spots and 'inky dinks' for key and kicker lights, plus half-broads and tiny 150 watt broads for fill in light.

In the apartment interiors, these tiny units were secured to ceiling beams and moulding to produce natural source lighting, and these were augmented by other midget spots mounted high on floor stands. In the pet shop interiors, the midget spots and broads furnished adequate light for a location that called for a great number of camera positions.

The entire production was lit in exceptionally low key and photographed with a fast lens. In shooting the Museum interiors, no attempt was made to light up the broad expanse of walls in the corridors and rooms. Instead, the low-key theme was followed and shafts of light were used at various planes to accent depth of the scene and to lend authenticity to the eerie mood of the chase scenes staged within.

Another thing which greatly simplified the photography was the absence of sound equipment—especially the mike boom which, under the lighting conditions used in the apartment and pet shop interiors, most certainly would have involved unwanted shadows. But this was not the primary reason for not recording sound with the picture. It was the belief of the producers Lee and Danziger, based on long experience of dubbing foreign versions, that it is possible to get greater dramatic feeling into the dialogue when it is post-recorded and dubbed in after the picture is cut.

Briefly, this dubbing process proceeded as follows: After the picture had been cut and edited, the cast—which included Franchot Tone, Jean Wallace, Mark Lawrence and others—was assembled at the recording studio and the picture projected by sequences. As the picture unfolded on the screen, the players spoke their lines accompanied by any necessary off-stage sounds such as the ring of a telephone, footsteps, the tinkle of liquor glasses, etc.—all of which were handled by the sound effects man. Careful rehearsals and skillful cutting of the film resulted in perfect synchronization between the post recorded sound and the picture.

The picture is certain to be studied with interest by producers of low-budget films. The natural location procedure, even though not followed for every scene in a production, can materially reduce production costs whether the picture is made in Hollywood or New York. Don Malkemes, who has been working behind motion picture cameras since 1918, believes that this unique production system will find special favor among those producing films for television, and also that it is worth careful study by the serious amateur movie maker for the lessons it teaches in lighting home interiors.

Malkemes, who got his first studio experience back in 1922 at the old Fox Western Avenue studios in Hollywood, has been active as a free-lance cinematographer in New York for the past several years. The production problems peculiar to picture making there have en-

abled him to develop many shortcuts in lighting and to discover many new and hitherto untried lighting kinks applicable to motion picture photography. Thus grounded in the rudiments of what is essentially economy production practice, he was especially fitted to handle the camera and lighting on "Jigsaw." Franchot Tone, who was associated with Lee and Danziger in producing the film, has been highly complimentary of Malkemes' camera-work. "It is doubtful," said Tone, "that there are many cameramen who could achieve the excellent quality of lighting that Malkemes did, considering the lighting equipment he had to work with and the limitations of his sets."

## CONTRACT LINEUP SYSTEM

(Continued from Page 413)

dow. The difference would be a saving of perhaps 25 to 30 minutes—valuable time on a movie set.

Actually, the Karl Freund Lineup System is predicated upon the same principles involved when an architect plans a house. If the architect doesn't alter his plans after construction is begun, the house will probably be completed on time and at the estimated cost. But if he orders more windows installed or perhaps a fancy door instead of a plain one, the builder's schedule will consequently be slowed and the house will invariably cost more than originally estimated. On the sound stage, if the director carefully estimates his needs and the cameraman and crew meet them to the letter, no delays will occur and cost of production is certain to go down.

What most certainly will result is that the onus for costly delays no longer will be charged against the director of photography and his crew—unless they actually are responsible for them.

## BANISH THE SHADOWS

(Continued from Page 417)

If your are planning an ambitious scenario film in which some or all of the action is staged out of doors, use of reflectors is a must; and we'll tell you how to make them—easily and inexpensively—a little later on in this article.

When shooting movies on a vacation trip, a reflector or two is all the more essential. So often movies are filmed in clear high altitudes with the sun overhead, with the result that shaded faces are badly underexposed. Here, more than at any other time, a reflector is necessary to throw light into the scene from the side. I have seen ever so many 8mm. and 16mm.

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Kodachrome movies spoiled because the matter of facial shadows was completely overlooked by the filmer, when the use of a newspaper, a towel or some other reflective material might have been used to lighten the shadows and save the picture.

Reflectors have their place in filming indoor shots, too. Often movies can be filmed indoors, using only sunlight coming through the window for illumination. But where the light source is decidedly from one direction, a reflector placed on opposite side of subject is necessary to reduce or eliminate the shadows entirely. Reflectors may also be used to advantage in conjunction with photofloods to throw fill light into the scene or upon subject where additional photoflood lamps are not available for the purpose.

The question is often asked: "How does one obtain correct exposure meter readings when reflectors are used?" The obvious answer is that you take your meter reading in the same manner as when no reflector is used. Light coming from the reflector contributes to the overall illumination falling upon your subject. Therefore, whether you are using the incident light or reflected light method of exposure calculation, follow the normal method of reading your meter—but be sure that reflector is in the very position in which it will be used when the shot is made.

In Kodachrome photography, it frequently happens that an aluminum or foil reflector throws too blue a light upon the subject—reflecting the natural blue color of the sky, of course. In such instances, the reflector may be covered with a sheet of amber cellophane, although it would be more advisable to cover the reflector with gold instead of silver or aluminum foil in the first place. Either medium will have a tendency to soften the light to a pleasing amber tone.

Where light coming from the reflector is too harsh, as when used at close range, it may be diffused by placing cheese cloth or curtain scrim over the reflector. This item is an essential accessory to reflector use and should be carried as such at all times.

Any movie maker handy with tools and paint brush can easily make one or more reflectors, using materials easily acquired even in these days of continuing material shortages. Essential requirements are the panel, the frame, and the coating material. Before starting construction, the movie maker should consider how he is to carry this equipment and store it. For infrequent home use, a single panel of plywood will suffice for the reflector; but where reflectors may be needed on distant locations, then the possibility of fitting them into one's automobile trunk compartment should be considered. In such cases, the two-panel folding type will be found ideal.

Select a panel of plywood 30 by 40

inches and cut it down the middle, making two pieces 15 by 20 inches. From 1 inch by 2 inch material, make two frames 15 by 20 inches. Tack plywood panels to frames, then join the two sections together using two small hinges obtainable at the dime store. On the open edge of one panel, attach a small carrying handle and then add a small screendoor hook and eye screw to keep the reflector closed when folded and not in use.

The next step is to coat the reflector surface. Simplest method is to first give panel a thorough coat of shellac. When dry, apply a coat of chrome paint—which is similar to aluminum paint but much brighter. One coat, carefully applied, should suffice. Where more than one reflector is to be made, the second one may be surfaced with silver or aluminum leaf. This is a ticklish job, although it isn't essential that the fine leaf be applied so precisely that no lap marks will show. In fact, many professionals apply the leaf so that it overlaps the adjoining leaf a half an inch or so, thus insuring 100% coverage of the surface.

To apply the leaf, the plywood surface is first shellacked. Then a second coat is applied, a little at a time, and the foil applied by means of the fine camel's hair brush supplied for the purpose. Foil, brush, and more detailed instructions for their use may be obtained from any sign painter's or showcard writer's supply house.

Some will find it more practical to coat both surfaces of the reflector—one hard and one soft—as do many Hollywood studios. Thus the one unit does double duty, and the more perishable foil surfacing may be applied inside where it will be safe from the abrasions incident to handling.

Another inexpensive and much simpler type of reflector may be constructed of panels of heavy cardboard or wall-board. If cut the same size, as suggested above, the panels may be hinged together by means of bookbinder's gummed tape or cloth, obtainable in stationery stores and some paint stores. Paint or foil surfacing may be applied in the same manner as for the plywood panels.

In use, such reflectors as we have described here require some means of support and for this, ordinary one-inch battens of the desired length should be supplied.

Some amateurs have made the support an integral part of the reflector, providing it in two hinged or sliding pieces and attaching it to the reflector frame work with a single screw, to allow it to swing out into place.

For use in making movies while traveling, one of the handiest reflectors we have yet seen consists of an ordinary white roller window shade, cut down to an area of about 30 by 40 inches—sometimes less—and one surface coated with alum-



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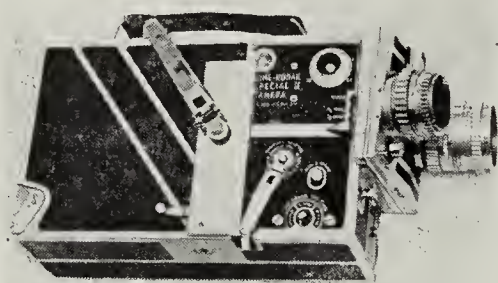
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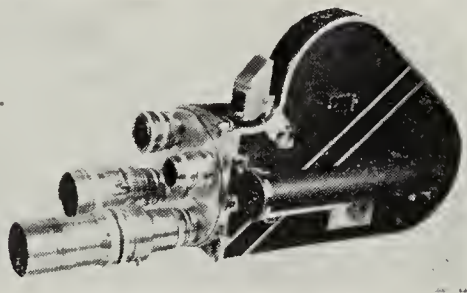
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inum or chrome paint. A reflector of this kind may unrolled and held by an assistant to furnish light in darkened areas, to throw light on shaded faces, and to otherwise balance the illumination within scenes encountered in one's travels. Such a reflector, made at this writer's suggestion, enabled a professional 16mm. cameraman to obtain some excellent shots of native craftsmen at work in Mexico recently.

Of course, before you set to work constructing reflectors for your own use, you may wish to test the effectiveness of such a photographic aid. If so, the next time you are shooting movies in sunlight, have another member of the family hold a towel, a sheet or a panel of white cardboard outside of camera range but in such a manner as to throw reflected light into the scene on the shadow side of your subjects. The results on the screen will convince you that reflectors are essential to good cinematography.

## SPECIAL EFFECTS LIGHTING

(Continued from Page 418)

has a relatively harsh quality when compared to interior lighting, so it is best simulated by shining an arc unit through a window or doorway of the set. If arc illumination is not available, however, a senior or even a junior spotlight can be used with satisfactory effect. If the film is being shot in color, use a straw-colored gelatin over the source to simulate the warmth of the sunlight.

The same types of lighting units are used for moonlight effects, except that they are generally toned down by means of diffusers, and the general key of the lighting is much lower. If a moonlight scene is being shot in color, a very light blue gelatin should be used over the source light.

Candlelight, lamplight and firelight effects are frequently called for in the modern commercial film—and they, too, require special set-ups. The main rule to follow in creating any of these lighting effects is: *simulate the source*. In other words, place your lighting units so that the light will fall on the subject in the same way that it would if your source were a candle, a lamp or an open fire. If you are uncertain as to how the light would actually fall under these conditions, set up the real situation, observe the lighting effect, and then set your lights accordingly.

Candlelight is a soft even glow that emanates from a central source. In order to duplicate this glow in lighting several people seated around a table, for example, you would use several Baby-Keglites or Dinky Inkies (one for each person and one directly over the candle) so that each

person will be evenly lighted from the central source and so that each will cast his own individual shadow. Slight diffusion over the units will add realism to the effect.

Lamplight effects are set up in a similar fashion, except that the key is usually somewhat higher and the shadows more definite. This means brighter lighting units and less diffusion. Whenever candlelight or lamplight scenes are shot in color, straw-colored gelatins should be used in front of the lighting units.

Colored light is a subject that has caused heated arguments in the field of commercial color film production. The purists maintain that it is an illegitimate, consciously arty device—but more and more commercial cameramen are coming to realize that colored light, properly used, has a definite place in commercial production.

So many industrial and technical subjects lack color that it is a constant struggle for the cameraman to add visual interest to his compositions. Machinery is usually a drab gray or black, and industrial workshops or laboratories are traditionally painted in the dullest possible colors. Many cameramen solve this problem by placing colored gelatins over the lights used to illuminate backgrounds. It is not recommended that the key light be tinted (unless there is some specific reason for it) but side-light, top-light and back-light suitably colored will add much even to scenes which include people. Be careful, however, not to let colored light dominate the flesh tones, as the results are sometimes fairly weird.

A single shaft of colored light falling across a background will often dramatize a scene that would be completely colorless otherwise. The camera purists will ask the logical question: "From what source is that light coming?" But the audience will rarely, if ever, ask such questions. It will only be conscious of the fact that the scene has a certain verve to it, plus the ability to hold interest.

Gone are the days when the commercial cameraman could get by with mere illumination. Today he must concentrate on lighting that not only makes the scene photographically feasible, but adds to the impact of the screen presentation, holds the interest of the audience, and thus contributes to selling the idea which the client wants to get across.

## MOBILE JACK

(Continued from Page 414)

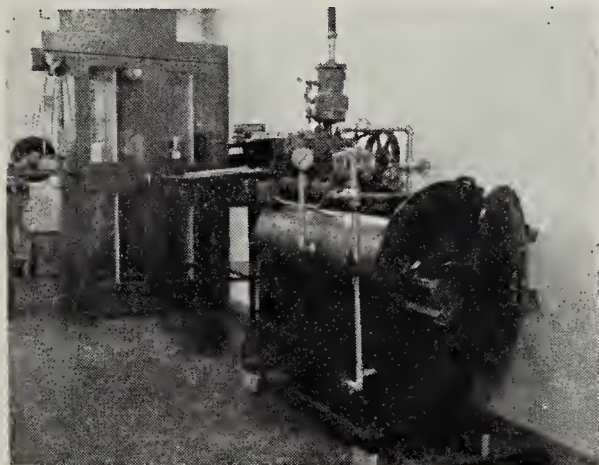
The Spelleroller, constructed entirely of steel, consists of a lifting device combined with a mobile framework carrying a vertical lifting bar mounted at the front, as shown in the accompanying diagram. On the bar are two hooks—one at the top and

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# WHAT'S NEW

## in equipment, accessories, service

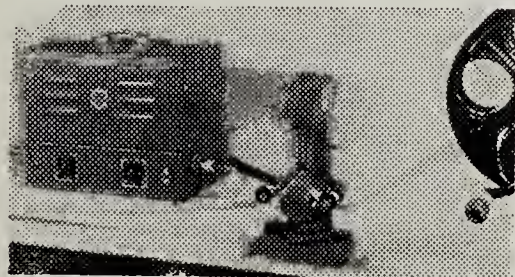


### Film Treating

Peerless Film Processing Corporation, 165 West 46th Street, New York 19, N. Y., known for their vacuum vaporating treatment which extends useful film life, has announced that increased facilities for the application of their process are now available at the laboratories of Jam Handy Organization, 2821 East Grand Boulevard, Detroit 11, Michigan and Sawyer's Inc., 725 S. W. 20th Place, Portland 7, Oregon.

As a result of this greater capacity, these laboratories will now accept film from outside customers for Peerless treatment in their respective areas. They will continue to apply Peerless film treatment to films printed on their own premises.

Other installations of Peerless vacuum-vaporating treating equipment have been made for Byron, Inc., Washington, D. C.; Reid H. Ray Film Industries, St. Paul, Minn., and Aatlas Film Corp., Oak Park, Ill.—all important producers of industrial motion pictures. They will make the Peerless treatment available to others, also.



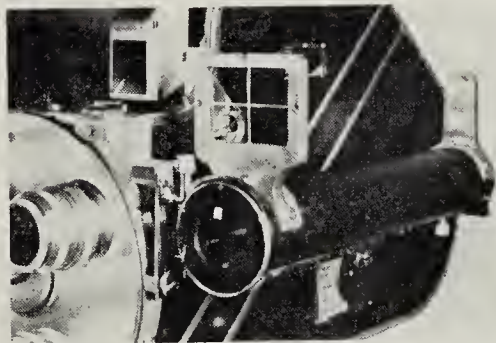
### Editone Sound Reader

A new type combination sound reader designed to instantly reproduce either 16mm. or 35mm. sound tracks—interchangeably without adjustment of any kind—is announced by Charles Mogull of Mogull's, Inc., 68 W. 48th St., N. Y. City. The new Ediphone Sound Reader is used between rewinds for fast cutting and spotting. Short cuts may simply be pulled through by hand for identification. A specially designed amplifier delivers ample

volume for faithful reproduction. Used in conjunction with conventional type viewer, the Editone simplifies editing of any film from a short to a feature.

### 16mm. Moviola

A new, compact, easy to use professional 16mm. Moviola is now offered by the Moviola Mfg. Co., 1451 Gordon St., Hollywood. Incorporating all the fine features of the standard 35mm. Moviola, the professional 16mm. model operates at controlled speeds forward and reverse. Improved optical system provides a brilliant 2"x2 3/4" picture on the hooded viewing screen. Complete descriptive literature is available for the asking.



### Open Frame Finder

Arthur H. Hart, 2125 32nd Ave., San Francisco, is now offering a special open frame viewfinder which mounts upon the regular tubular finder of the Cine Kodak Special. Finder illustrated above covers area of standard 2" lens. Masks are supplied for use with lenses of other focal lengths. Cross hairs provide accurate centering. Solid masks are available when desired.

### Brenkert Projector

A new 35mm. Brenkert Film projector, especially designed for the medium-size theatre which must operate on a conservative budget, is announced by the Brenkert Light Projection Company, subsidiary of R.C.A. New model is available in both single and double shutter models; has a large door on operating side that exposes entire film compartment; inner surface of film compartment is finished in light colored enamel to facilitate inspection of film; and the intermittent mechanism is identical to the larger Brenkert BX-80 projectors.

### Meter Booklet

An informative booklet, "What Every Cameraman Should Know About Ex-

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## "Goerz American"

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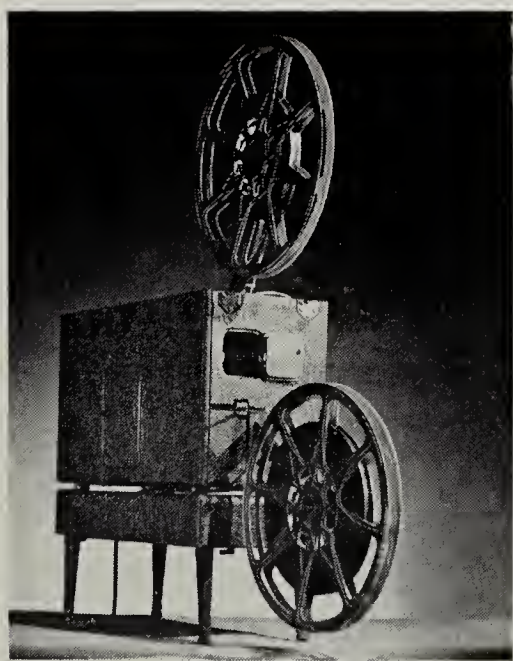
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posure," is being offered free to readers of The American Cinematographer by the American Bolex Company, manufacturers and distributors of the Norwood Director exposure meter. Make your request to the company at 521 5th Ave., New York City 17.



### Sound Kodascope

Eastman Kodak Company announces that the Sound Kodascope FB-40 is again in production after being off the market

several years. Projector operates from within its own carrying case. Upper section of case provides self-contained projection stand supported on four sturdy, rubber-tipped feet, which can be placed on any table. Amplifier is 40 watt capacity, has 12 inch speaker, and reel capacity of projector is 1600 feet. Price with 2" f/1.6 lens and twin speaker unit is \$855.00.

### Cinematographic Annual

A limited number of copies of the first edition of the A.S.C.'s "Cinematographers Annual" is available for students

of cinematography, movie amateurs, professionals and others who are interested in completing their shelf of books on the art and science of cinematography. Rated a rare collector's item, book includes technical articles on all phases of cinematography and studio practice, written by top studio cinematographers, much of which is in use in Hollywood studios today. The book is printed on quality paper and bound in materials that would be prohibitive were the book printed today. Price is \$3.50 per copy, postpaid, from American Society of Cinematographers, 1782 N. Orange Dr., Hollywood.

## MOBILE JACK

(Continued from Page 430)

one at the bottom. These hooks fit under battens on the flats, and two protruding shoulders on the framework of the jack rest against the outside of the lower batten taking the strain and also insuring that when the flat is released it is still vertical.

The lifting itself is done by means of counterweight leverage. Each jack can lift a weight of 750 pounds. The maximum load is fixed by the counterweight, which is controlled by an operating handle, and if overloaded, no lift will take place. A second, and if necessary, a third Spelleroller can be attached to a flat or wall in the same manner. Regardless how many are used, the counterweights automatically adjust themselves so that all jacks are

therefore taking the same strain.

The counterweights also insure that if two or more jacks are in use, they automatically overcome any discrepancy in the level of the floor or road surfaces when the flats are being transported from one place to another.

The Spelleroller is on four wheels, actually large swivel casters. The two at the front are well spaced apart, the two at the rear very close to one another, and the whole thing can be pushed about very easily. The jack has a set lift of 1½ inches and a maximum of 5 inches, controlled by a loose adjustable pin which sets either of the two lift ranges.

(Continued on next page.)



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## MISCELLANEOUS

A.S.C. "CINEMATOGRAPHIC ANNUAL," published 1930. Limited number copies available at \$3.50. A collectors' item. A.S.C. Agency, 1782 N. Orange Dr., Hollywood 28, Calif.

## MOBILE JACK

(Continued from Page 433)

One particular advantage that use of the Spelleroller offers is that wild walls no longer have to be fitted with casters. Furthermore, all the time required in preparing and attaching a roller-fitted chassis is now done away with completely.

Not only is considerable time saved in moving flats and walls, but quick changeovers are speeded up to a degree which has never before been thought possible.

Cameramen especially have lauded the new device for its ability to speed up changes in camera setups and thus enable them to keep to their shooting schedules with considerable ease, if not to actually gain time. Some even suggest that the Hitchcock type of "continuous take" now becomes possible on almost any set by using the Spelleroller to quickly remove wild walls and re-set them in place.

The Spelleroller has been patented in Great Britain and a patent applied for in the United States. It is being manufactured for the British Ealing Studios by a local construction company and the approximate cost of each jack is reported at \$250.00 ★ ★ ★

## CURRENT ASSIGNMENTS

(Continued from Page 406)

### Universal-International

• MAURY GERTSMAN, "The Amboy Dukes," with Peter Fernandez, Barbara Whiting, et al. Maxwell Shane, director.

• WILLIAM DANIELS, "The Life Of Riley," (Brecher Prods.) with William Bendix and Rosemary DeCamp. Irving Brecher, director.

• IRVING GLASSBERG, "Calamity Jane and Sam Bass," (Technicolor) with Yvonne DeCarlo and Howard Duff. George Sherman, producer.

• MAURY GERTSMAN, "Ma And Pa Kettle," with Marjorie Main and Percy Kilbride. Charles Lamont, director.

### Warner Brothers

• ELWOOD BREDELL, "Happy Times," (Technicolor) with Danny Kaye and Barbara Bates. Henry Koster, director.

• KARL FREUND, "Montana," (Technicolor) with Errol Flynn and Alexis Smith. Ray Enright, director.

• TED MCCORD, "Flamingo Road," with Joan Crawford and Zachary Scott. Michael Curtiz, director.

• JACK CARDIFF, "Under Capricorn," (Shooting in London) (Technicolor) with Ingrid Bergman and Joseph Cotton. Alfred Hitchcock, director.

• SID HICKOX, "Colorado Territory," with Joel McCrea and Virginia Mayo. Raoul Walsh, director.

• CARL GUTHRIE, "Deadlock," (Subsequently retitled "The Side Of The Law," with Viveca Lindfors, Kent Smith and Janis Paige. Richard Bare, director.

• BOB BURKS and WILFRID CLINE, "Task Force," with Gary Cooper, Wayne Morris and Julie Brennan. Delmar Daves, director.





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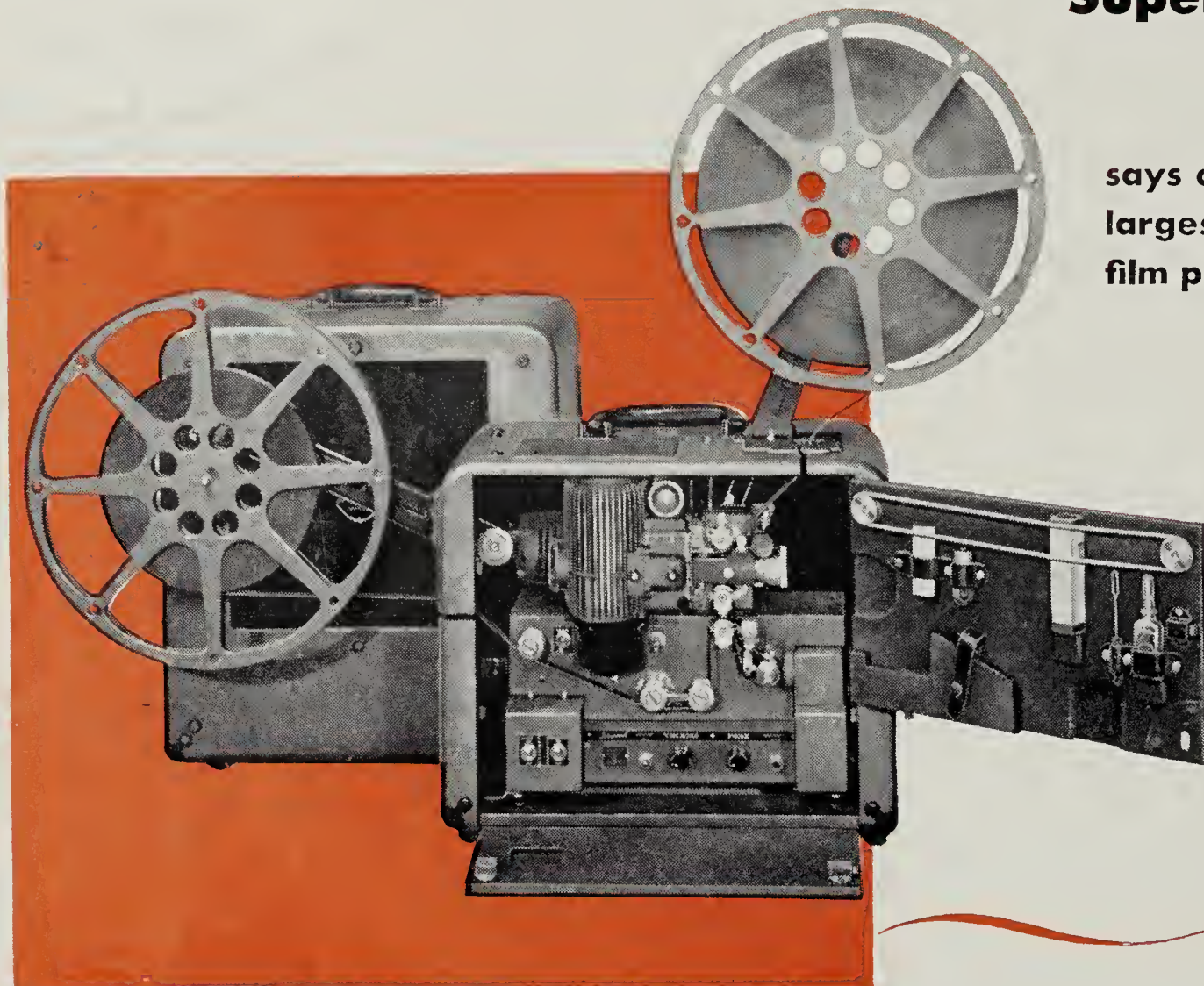


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